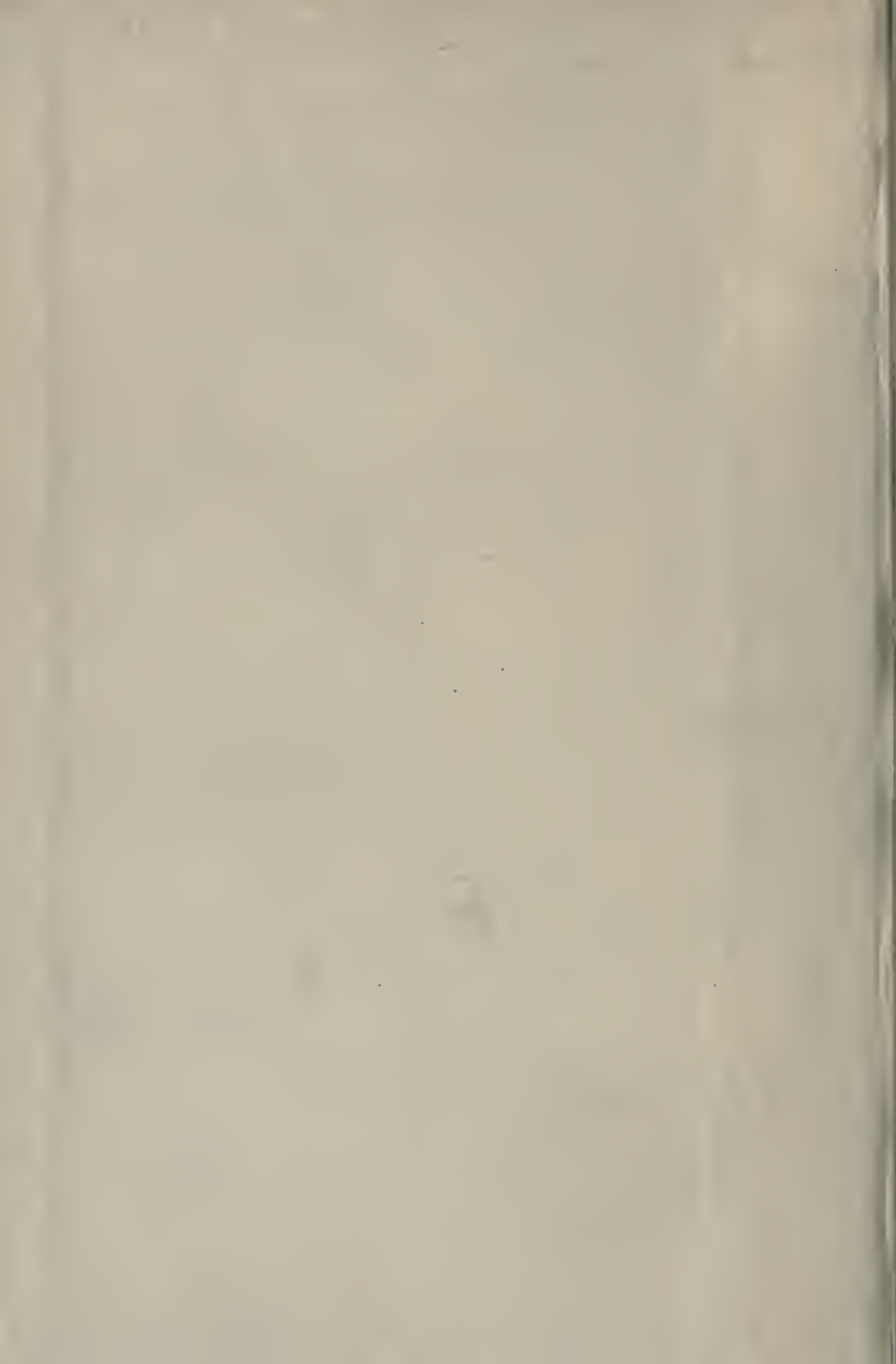


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CONTENTS AND INDEX

TO

VOLUME I.

CHARLES B. CORY,
Curator, Department of Zoölogy.



CHICAGO, U. S. A.
September, 1917.

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 Page 10, 7th line from bottom, for *Minus dominicus*, read *Mimus dominicus*.
 Page 36, 10th line from top, for *Xantholina pyrgita*, read *Xanthodina pyrgita*.
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 Page 245, 7th line from bottom, for p. 670, read p. 368.
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ORNITHOLOGICAL SERIES

Vol. 1, No. 1.

CONTRIBUTION

TO THE

ORNITHOLOGY OF SAN DOMINGO

BY

GEORGE K. CHERRIE,

Assistant Curator of Ornithology.

CHARLES B. CORY, Curator of Department.



CHICAGO, U. S. A.

March, 1896.

PUBLICATIONS OF THE MUSEUM.

For the convenience of scientific workers it has been deemed expedient to issue the publications of the Museum in separate series for each of the sciences represented. The following series thus far have been established : Historical, Geological, Botanical, Zoölogical, Ornithological and Anthropological.

A consecutive number has been given the entire set of publications to indicate the order of issue. Each departmental series, however, has its own volume number and individual consecutive pagination, making the literature of the science, or general subject, independent and complete for separate binding; or they may be bound in order of publication without relation to subject. Proceedings, memoirs, monographs, bulletins, and hand-books and catalogues of collections, are included within the scope of the publications.

Full lists of the publications of the Museum may be found in the Annual Report of the Director.

Publications are sent to societies and institutions of a public character that reciprocate with their own literature, and to a limited number of scientists who are able to exchange.

FREDERICK J. V. SKIFF,
Director.

CONTRIBUTION TO THE ORNITHOLOGY OF SAN DOMINGO.*

BY GEORGE K. CHERRIE

Under instructions to make a collecting trip to San Domingo during the winter of 1894-95, I embarked from New York, December 22, on a Clyde boat for the tedious voyage to Santo Domingo City, off which port I arrived January 8, 1895.

Steaming slowly into the mouth of the Ozama River we pass close under the historic frowning walls of the old fort—built to guard and protect the “new city”—and where in 1500 Columbus and his brother Bartholomew were imprisoned. Following the river front and joined to the fort is the old wall of the city almost intact. Then loom up, desolate and forsaken, the gray walls of the one time palace of luxury, the seat of elegance, of oriental ease and refinement, the home of Diego Columbus—today overgrown with moss and lichens. Small trees and shrubs have found a foot-hold in the crevices of roof and wall; pigeons find a nesting place and hoards of bats a safe retreat from the light of day.

Custom inspection of my outfit was rather tedious and annoying but I was finally safely on the island with my belongings. Preparations for the interior journey began. Coffee, sugar, rice and beans constituted the bulk of the provisions. Once outside of the city, there are no roads and everything must be transported by pack animals or on men's backs. I purchased two horses. I secured the services of an old negro as guide and servant. On the morning of the 19th of January I was off for the hills. My guide walked behind driving the animal loaded with the provisions, cooking utensils, blankets and hammock. I rode ahead seated between two small trunks—containing light wooden trays for the bird skins—with cotton, skinning tools and gun supplies, which were strapped to my own animal. I followed a northwesterly direction, on leaving San Domingo, over the hills and through the little old historic town of San Carlos, just beyond the walls of the capital, and then over a smooth road without hills but

*I would wish here to express my sincere thanks for many favors received at the hands of Archibald H. Grimke, American Consul in San Domingo, a gentleman who holds America and Americans' interests paramount, who seems to feel he represents a great nation and a great people and sustains the dignity of that people by a manly self-respect and dignity commanding the highest esteem from his own countrymen and from those among whom he is thrown.

that gradually yet steadily carried me to a higher altitude. For seven hours under a burning sun along the divide between the rivers Jaina and Izabel and in that distance and time not one drop of water is seen.

All along the road—all through this part of the country there is a considerable population, yet just where to find a house one can never tell. The road we followed is merely a well-worn path—there are no carts or wagon roads in San Domingo; all freighting is done by pack mules, and here and there you see paths, only a little less well worn, leading to this side or that. If one of these paths be followed it will usually be found to terminate at some sort of human habitation.

A good many people were passed along the road but the only thing characteristic about those I met was the huge pipe the women all carry. It is here the women seem to be the inveterate smokers and a pipe is preferred.

After the first seven hours' ride I crossed a small stream, a tributary of the Izabel. After that the country becomes more broken and one climbs faster. Up to this point there had been no forest and trees were only seen in scattering clusters, far to the right or left in direction of either the Jaina or the Izabel. Now the clumps of trees marking the water course became more common and soon we entered the forest, fringing the foothills of the mountains.

I made Catare my head-quarters from January 21 to February 6 and later from March 2 to March 7. It is at an altitude of about 1,500 feet, just in the foothill of the central mountain range, northwest of San Domingo City.

During the years spent in Central America I constantly wondered why any one could ever speak of the birds of the tropics as being voiceless or songless; but my experience at Catare and in San Domingo in general gave me abundant solution of the problem, and if the popular notion of the songlessness of birds of the tropics comes from observations made in the West Indies, I can easily understand how well it was founded. At Catare, where I did my first collecting, the most striking peculiarity to me about the region was the utter silence of the forest. I would walk for hours and scarce hear a bird note. Birds were common enough, but in the semi-twilight of the forest they flitted noiselessly from branch to branch, restless and active, searching for their insect prey; but all the time not a note or piping sound broke their silence. In the open savannas and along the edges of the forest the mocking birds are almost always singing, but the forest itself is silent—save on those rare occasions when that

wood-spirit, the *Myiadestes*, sets every nerve a-tingling with pleasure, but the *Myiadestes* are rare as their songs.

It may not be without interest to present a few notes from my journal regarding one of my excursions from Catare, which pretty well illustrates the difficulties one encounters in traveling through the country.

Leaving Catare early in the morning I took my way in the direction of Yuna. The road shortly after passing the Jaina River became something awful—it never could have been very good, but the storm of the previous September (1894) blew a great many trees across the path, and these had not been cleared away. Frequently I would have to assist my guide and the two of us would cut a path with our "*machetes*" for the pack animals. What shiftlessness one sees everywhere. Wherever the road leads through the forest one wades in mud to the knees and in places the poor horses with the packs plunged and pitched terribly as they struggled up some bank out of the many small streams that we crossed. Yet only a very little work would be required to make good roads.

The road follows up the course of one of the tributaries of the Jaina (the Guanaito), crossing and recrossing. In the way several savannas are crossed—bits of grass-grown prairies that would afford pasturage for a great many cattle. The timber lands would all prove good for farming when cleared. There are many splendid woods, and as we climbed higher in the mountains, after leaving the direct course of the river, we found that pines multiplied rapidly and formed the greater part of the trees of the forest.

On this excursion I secured the type specimen of *Elainea cherriei* and my first examples of *Corvus leucognaphalus*, *Amazona sallæi*, *Blacus hispaniolensis*, *Tyrannus dominicensis*, *Spindalis multicolor* and *Eutheta lepida*.

February 6, my supplies of all kinds being about exhausted and my packing cases for skins full, I began my first return trip to San Domingo City.

After a short rest and a little collecting about San Domingo City, I again took the road for the interior, back through Catare, up and across the central mountain range and down to the head waters of the Vuerto River, a tributary of the Maimon, which latter empties into the Yuna. Here at a point called Aguacate I stopped from February 20 to February 28. It is just at the foot of the mountain divide on the northern slope of the range separating the high plains and prairie table lands of the interior from the Caribbean slope.

My guide and servant became now only a burden to me, being so

sick with fever that he could not walk. I started back toward Santo Domingo City, but on the morning of March 2, arriving at Catare, I found it would be impossible to continue without giving him a rest. On March 7 my packing cases were overflowing with bird skins and the guide being a little better I made another start cityward.

A few days' collecting about San Domingo City, a laying in of a fresh supply of provisions and materials, the securing of my third guide and servant, and I was once more ready for the road.

A day's travel westward from the capital through a rather barren region, but one pretty well populated, carried me to the busiest, or least somnolent, of the inland towns on the Caribbean slope. San Cristobal is located on the Nigua River at the foot of Mount Barbacoa rather pleasantly situated, comparatively a clean place and a light-colored population.

Excursions were made in various directions about San Cristobal, to the summit of Mount Barbacoa—about 7,000 feet altitude—where is to be found the crumbling remains of the walls of an old fort, and to the caves in the sides of the mountain called *El Calabosa*.

I would scarcely know how to describe these caves. There is no grandeur about them and little of beauty. They are only "immense." In going through them, one moment the passage narrows until you can barely squeeze through; again one must get down on hands and knees and crawl, then farther on the passage may widen into an immense vaulted chamber.

In only one of the many caves or series of chambers entered were bats at all common. This chamber called *Cuervo de los Murciélagos* (cave of the bats) was inhabited by thousands upon thousands of these symbols of the diabolical. When they were disturbed by our entrance, and by my firing several shots, the noise made by the countless wings gave one as a first sensation the peculiar feeling attendant on a slight earthquake shock. The floor of this chamber was covered with a thick layer of manure. Two species of bats were found inhabiting these caves, and a Roof Rat was shot far from the entrance in another.*

I spent a night on Mount Barbacoa at the rancho of a "peon" and here met with hospitality for the first time in the island. When I offered to pay for my night's lodging I was surprised at being told I owed only *su buena voluntad de U!* (only your good wishes!)

At this point my guide was taken sick and I was delayed for a few days, but securing another man I was again on the road March

*A list of the mammals collected on the expedition will be published by Prof. D. G. Elliot, of the Field Col. Mus.

.28, moving farther westward in the road to Maniel and Loma Tina, the latter the highest mountain peak in the West Indies.

After leaving San Cristobal, the road as far as the crossing of the Nisao River and a little beyond, winds through a very pleasant country, pretty well populated, splendid land and all fairly well cultivated. Then commences a barren stretch of country, with no vegetation except scrub timber, and a very scanty population until one reaches the little town of Bani. Beyond this point the country becomes even more barren and cheerless. The road is hemmed in with giant cacti, while other and smaller species are scattered on all sides in greatest profusion. The road itself is very stony and rough, but not very steep. There is absolutely no water along this road and one travels for near an entire day over a dry, sandy, cacti-covered desert. We passed one little village called Calabasa—a collection of half a dozen houses—the occupants of which bring their water for miles.

At Honduras, where I arrived late one evening, there is water. The little creek Arroyo Bahia here shows itself for a short distance and is then again lost in the sand of the desert.

I collected at Honduras from March 29 to April 2. Here I secured the two first specimens of *Hyetornis fieldi* Cory, and later at Maniel the type specimen. Also the first examples of *Euphonia musica* I met with were secured here. Five days at Honduras and my record for the time was 210 bird skins.

On the morning of April 3 I started northwestward through the hills toward Maniel, far up in the mountains near the head of the river Ocoa. It is a very rough road one must come over,—not so much for the hills as for the stones and boulders that one must get over somehow. For the greater part of the distance the road follows the bed of the river, walled in almost as a cañon. I crossed the river thirty-two times in reaching Maniel. While here I made an effort to reach Loma Tina but was unable to find a competent guide, and this coupled with the fact that I found all paths up the mountain completely blocked caused me to abandon the idea. I remained at this point for six days and then having my packing cases full started for San Domingo City. My trip to Maniel was the last excursion made to any considerable distance from San Domingo City.

From the localities above referred to, short excursions were made into the surrounding country on all sides. But always and everywhere I went I found travel and moving from one point to another exceedingly difficult, attended with much labor and inconvenience. Although I was in San Domingo during the "dry season" it was not

“dry,” and I think it rained on an average of at least every third day during my stay. The roads, if cattle paths through the forests over the mountains and across the prairies are worthy of the name, were uniformly bad.

Throughout the interior of the island hospitality is an almost unknown virtue among the people, and no opportunity to impose upon or take advantage of the traveler or foreigner is permitted to pass.

ANNOTATED LIST OF BIRDS COLLECTED.

1. *Turdus aliciae*, *Baird*.—Single specimens were noted on three occasions; twice high up in the mountains—above Aguacate—on the 22d and 25th of February and one at San Domingo City, on the coast, May 1. All were males and extremely fat.

2. *Mimocichla ardesiaca* (*Vieill.*). RUISEÑOR DE CIERRA; CANELO—Found everywhere on the coast and high up in the interior. Not at all uncommon, but always and everywhere found it was very shy and difficult to approach. In freshly killed specimens the eye is red-brown, eyelids, bill, feet and legs light Indian Red, tip of bill and claws dusky. Thirty-five specimens were secured. The song is quite similar to that of *Merula migratorius* and in almost every action recalls to one's mind the American Robin.

3. *Myadestes montanus*? *Cory*. JILGUERO—This species is evidently nowhere common, and is only found high up in the mountains. It is very shy and retiring in its habits. The natives are almost all acquainted with the song; but if my memory serves me rightly I did not meet with one who was sure he had ever seen the bird. It is held in superstitious fear by many, who believe that to see this "spirit of the wood" were surely the forerunner of some great calamity, or death itself. Everyone was much surprised that I could shoot the bird, they believing it could not be killed. Where or how such strange beliefs could have originated I have no idea, because as a singer the *Jilguero*, to me, stands without an equal. Sweeter music I never listened to. It has an indescribable charm—notes so liquid—clear as a bell, and drawn out with such a cadence of melody. For a moment the sound seems to come from this way and then from that, and ever the singer holds you spell-bound. Do you seek the source of that wondrous voice, it is all in vain. There is only the monotony of green leaves everywhere. There is no other sound only the thrilling of every chord of the imagination by notes so sweet they hold you enthralled. It is indeed a "spirit" of all that is lovable, of all that is good. But I despair of writing any description of a song so beautiful, or of the sensations or thoughts it inspires.

I have heard the song at early morning, at midday and in the evening. At Aguacate where I secured seven of the ten specimens collected, the mating season was evidently just beginning. On two occasions I had opportunity of watching the birds while busy with their love affairs. In every movement and action they brought to mind our Bluebird, when in the same happy mood. There was a like peculiar raising and flitting of the wings, evidently a joyousness of spirit that would not be controlled.

In a freshly killed bird the eye is dark brown, legs and feet yellowish, claws dusky, bill black. I found this species only in the deep dark forest, never in the open. The food consists of both fruit and insects. The latter are often taken on the wing.

Ten specimens were secured by me, three from Catare and seven from Aguacate. In the series there is slight yet quite noticeable individual variation in the shade of tawny chestnut on the under tail coverts and crissum; and also in the extent of this color over the lower parts. In one of the specimens from Catare the color is confined almost entirely to the under tail coverts, while in another from Aguacate the entire crissum is tawny with bits of color extending over the breast almost to the chestnut of the throat. In all of the specimens there is a faint olive shading in the back—in some a few olive-tipped feathers. These olive-tipped feathers, I am much inclined to think are remnants of the first plumage.

All of my San Domingo specimens differ considerably from the type of *M. montanus* from Hayti, more in fact than they do from the Lesser Antillian form *M. sanctæ-luciæ*. However the type and only example of *M. montanus* is so badly mutilated that satisfactory comparison with other specimens is impossible, and while the differences are apparently of such character as to warrant a separation, making an eastern and a western form for the island, the absence of material for adequate comparison from Hayti compels me to merely call attention to the apparent and most obvious differences.

M. montanus has no white spot on the chin, and the rictal streak is pale reddish-brown. In my specimens from San Domingo the chin and the rictal streak are both white.

4. *Minus dominicus* (Linn.). RUISEÑOR—One hundred and five specimens of this mocking bird were collected. It was found at almost all points visited, but was most abundant near the coast, and apparently has a preference for inhabited neighborhoods.

Several broods are reared each season, as about San Domingo City I secured young birds just from the nest as early as March 18 and as late as May 2, while on the latter date a female was collected

while in the act of carrying nesting material, and the condition of the abdomen indicated that she had been brooding. In different localities the nesting season varies, and I imagine must be in great part governed by the food supply which again is controlled by the rains. At Honduras, during the last days of March and the first of April, nesting had not yet begun. Honduras lying as it does in the sandy cacti-covered arid belt probably depends, more than other localities, on the rains for the awakening of its insect life.

Adult birds in life have the eye clay yellow, bill, claws, feet and legs black.

5. *Mniotilta varia*. (Linn.)—Only nine specimens were secured between the dates of January 22 and April 21. Not at any time observed to be common.

6. *Compsothlypis americana* (Linn.)—Eighteen specimens were secured. Noted at all points visited except Maniel, but not seen after April 2.

7. *Dendroica tigrina* (Gmel.)—Twenty-one specimens. Found at all points visited, but none seen after April 6.

8. *Dendroica caerulescens* (Gmel.)—Forty-nine examples collected. Found at all points visited and decidedly the most common of the North American birds.

9. *Dendroica coronata* (Linn.)—Not common, and none seen after March 27.

10. *Dendroica discolor*. (Vieill.)—Noted between the dates of February 13 and April 2, but not common at any time.

11. *Dendroica palmarum* (Gmel.)—Tolerably common between the 12th of February and the 1st of April.

12. *Seiurus aurocapillus* (Linn.)—Not uncommon. Found at all points visited.

13. *Seiurus noveboracensis* (Gmel.)—Rare. Seen on two occasions only, February 24 and March 16. This is, I believe, the first record from San Domingo.

14. *Seiurus motacilla* (Vieill.)—Rare. Only a single specimen taken January 22.

15. *Geothlypis trichas* (Linn.)—None were noted during January, and the first specimen secured was on February 2. There was a steady increase in numbers until the middle of March when the species might have been said to be common. There was no appreciable diminution in numbers up to the time of my sailing, May 8.

16. *Micrologia palustris* Cory.—Rare and apparently not found in the interior or on the higher altitudes of the coast district. Frequents the dense thickets, preferably about the swamps, and feeds, I believe, exclusively on insects, in its search for which the actions much resemble those of a *Vireo*. If the bird has a song I did not hear it, and the only voice is a short contented "cheep," as the little hunter goes in and out among the leaves. It is not at all shy, very readily approached. A breeding female was taken at San Domingo City, April 30. Altogether eight specimens were secured, five from San Domingo City and three from Honduras.

17. *Setophaga ruticilla* (Linn.)—Tolerably common, and seen at all points visited.

18. *Coereba bananivora* (Gmel.)—Common, but rather shy and not readily approached. Found on the coast and high up in the mountains, deep in the forest and on the edges of clearings. Has a short little song consisting of some half dozen notes, repeated over and over in the same order.

I found this species nesting at San Domingo City, February 15. Both male and female worked at carrying nesting material.

In the series of forty-four specimens before me all the variations in color due to age are well shown. From young birds that are above nearly uniform dusky gray-brown, with yellowish superciliary stripe, and soiled olive yellowish below with a bit of bright yellow in center of breast, we have every intergradation to the fully adult plumage, of dull black above, white superciliary, dark slate-gray throat, bright yellow center of breast and abdomen and grayish olive sides.

19. *Petrochelidon fulva* (Vieill.)—Quite abundant along the coast but not noted in the interior. At San Domingo City breeding birds were taken as early as April 24, and during the same week nesting seemed to be at its height. The nests were all being lined with the soft cottony-like material (called in Spanish America "Balsamo"), that grows in catkins and surrounds the minute seeds of one of the native trees of the country. The birds were going and

coming after this material in a continuous stream. Ordinarily a mouthful was snatched while on the wing, but sometimes the birds would alight and deliberately take all they could conveniently hold in the bill and then fly away. The males accompanied the females, but beyond this encouragement seemed to give no other aid in the work.

20. *Vireo calidris* (Linn.). JULIAN CHIVI—One of the most abundant species met with. The song is somewhat like that of the Red-eyed Vireo. One hundred and forty-five specimens were secured and I believe all are typical *calidris*.

21. *Dulus dominicus* (Linn.). SIGUA DE PALMA—Gregarious and abundant at almost all points visited. The nests are tremendous affairs, invariably (?) placed in the tops of the Royal Palms, built of relatively large sticks and twigs. A number of females use the same nests, and there are many entrances to the interior. I did not have opportunity to examine a nest closely, so do not know the internal structure.

22. *Euphonia musica* (Gmel.)—Rare. Eight specimens were taken at Honduras and one at Maniel. Not seen at any other points. Although quite conspicuous for its colors I did not meet with any of the natives who had ever seen the bird. I did not hear the song.

23. *Spindalis multicolor* (Vieill.)—Rare, and apparently unknown to the natives. Taken and observed only at Catara and Aguacate. Four adult males, two adult females and four young males, in transition plumage from that of the female to that of the male, constitute the list of specimens collected. All the specimens secured by me were taken in old overgrown clearings where the birds were feeding on some sort of a berry that was ripe at the time (January and February).

Young males resemble the females, but are slightly grayer above and lighter below, with a white chin and throat. In assuming the plumage of the adult male the feathers of the crown first begin to blacken, the white throat is gradually replaced by orange yellow, while brownish-chestnut feathers appear on the gurgulum, and the dusky or olive grayish feathers, with black shaft streaks, of the breast are crowded out by orange yellow ones. White feathers begin to appear and form a superciliary streak, and the lores and auriculars together with the patch on the side of the throat grows black. In none of the four young males before me are the two outer pair of rectrices marked with white as in the adult.

The adult female is dusky olive green above shading into rather bright yellowish green on the rump and upper tail coverts—this yellowish green color is not perceptible on the nape as it is in females of *S. portoricensis*. Below ashy, palest on lower breast and abdomen, the under tail coverts whitish and all bathed with a yellowish olive shading and indistinctly streaked with dusky brown. The outer pair of rectrices are edged with white for the terminal third on the inner webs, and the second pair are tipped with the same color on the inner webs. There is no sign of dull yellow on the breast of my specimens.

Birds freshly killed have the eye dark brown; feet and legs dusky plumbeous; claws, maxilla and tip of the mandible, black; base of mandible, plumbeous black.

24. *Phoenicophilus palmarum* (Linn.). SIGUA MAIMONERA; SIGUA AMARILLA—Probably the most abundant species to be met with in San Domingo. Two hundred and twenty-one specimens were secured with representatives from all the localities visited. However, after one ascends pretty well up into the mountains this bird becomes comparatively rare. I found this species chiefly in the forests where it may be looked for with equal success in the low bushes or high up among the tree tops. It feeds both on fruit and insects. It has, I believe, no song, but a somewhat Cat-bird-like note of alarm.

Females resemble the males, and young birds are similar to the adults, except that the black of the head is replaced by dusky grayish or slate color, and the entire head, neck and breast washed with olive yellowish.

A good many breeding birds were taken, but I was not fortunate in finding either the nest or eggs, and nothing was learned of the breeding habits.

25. *Calyptophilus frugivorus*, Cory.—Rare, seen only at Aguacate where three specimens were secured, two males and a female. It may have been less rare than I suspected, because for some time I confounded this with the preceding species. Early every morning before it was fairly light I had the habit of going down to the river, nearly a quarter of a mile from where I had my camp, and I had remarked with some surprise that at this place (Aguacate) *Phoenicophilus palmarum* seemed to have a pleasant early morning song. In the gray of the morning I had noted the bird in the bushes at the side of the path, but always mistook it for *palmarum*, until on the morning of February 26 something prompted me to commence

my collecting earlier than usual. The result was that when I picked up my specimen I recognized I had *Calyptophilus*. I had seen and heard the bird every morning prior to that time, and three were taken on that date, but none were seen afterward. The song from *Calyptophilus* was the first sound to herald the approach of day (the mocking bird did not begin his song for half or three-quarters of an hour later), but once the sun was fairly up that song was hushed until another day.

In none of the three specimens is there any sign of a yellow spot in the center or on the sides of the breast.

26. *Pyrrhulagra violacea* (Linn.)—CHICHIGUA; SIGUA NEGRA; SIGUA PRIETA. Tolerably common at San Domingo City, Catara and Aguacate, but not noted at the other localities visited. Seventy-five specimens were taken, forty-seven of these were males, twenty-seven were females and one in which the sex was not determined.

Referring to the females of this species, Professor Cory remarks (Auk, Vol. VIII, 1891, p. 296), that they assume "a black plumage similar to the males." And later, Mr. W. E. D. Scott in his "Observations on the Birds of Jamaica" (Auk, Vol. X, 1893, p. 180), says, "In a large series before me there are many females quite as brightly colored as the more intense males, and indistinguishable from that sex in its highest plumage by any external features of color or appearance." With both of these statements I concur in the main, but in my series there are thirty-two males and nine females in the black dress. I do not think the brightest colored female compares on the back with the least richly *glossy* back among the males. Neither does the chestnut of the throat seem so extended in the females. However, these are only very minor differences, and the birds in the field are indistinguishable.

I have ten males and twelve females in mixed plumage, varying from birds in an almost completely black dress to others having only a few scattering black feathers about the head. There are five males and six females not showing any black in plumage. Some of these have a russet throat patch pretty well developed. In one of the males in mixed plumage, the chestnut feathers of the throat are all black tipped. The throat and under tail coverts in both males and females in the black dress are a bright chestnut. Birds in mixed dress usually have the throat a trifle paler, approaching nearer to a russet, but becomes more chestnut and brighter in proportion as the black extends through the plumage. The color of both the throat (if the patch is yet at all developed) and the under tail coverts in specimens without any black in the plumage is pale russet.

The under tail coverts do not begin to become chestnut until the general plumage is black. The russet supra loral streak and under tail coverts, apparently are characters from the nestling plumage.

Two breeding females were taken April 21 and 29; one is in the black dress and one in mixed plumage.

The Chichigua I found shy and retiring in habits, frequenting low thick underbrush. Often noted feeding on fruits and again on the ground scratching among the dead leaves after insects.

27. *Loximitris dominicensis* (Bryant). Nine specimens of this rare bird were secured at Aguacate and Catare. It was not noted in other localities. Adult males and females, and immature of both sexes, are represented in the nine examples before me.

The adult female has the head and back dull olive, lightly mottled with dusky brownish, the rump and upper tail coverts are a little brighter olive and without any mottling. The quills are all narrowly margined with bright olive yellow. The greater, middle and lesser coverts are margined with the dull olive of the back; but the greater and middle coverts are also broadly tipped with light olive yellow, forming two distinct wing bands. All the rectrices are blackish brown, narrowly margined with yellowish on the inner webs.

Below the throat, upper breast and sides is dusky olive gray, belly and crissum whitish, and all mottled with blackish brown shaft streakings. Under tail coverts broadly marked with blackish shaft streaks.

Immature males and females are similar to adult females, but brighter olive (yellow) above and decidedly yellowish, or yellowish olive, in place of grayish or whitish below.

28. *Euetheia lepida* (Jacq.). JUANA MARUCA—Tolerably common, especially near the coast. Observed at all points visited except Honduras.

29. *Euetheia bicolor* (Linn.). JUANA MARUCA—Common. Seen and collected at all the localities that I passed through.

30. *Icterus dominicensis* (Linn.). SIGUA CANARIA—Quite common, but not found in the forest districts except where there has been considerable clearing, and is most abundant in the savannas. Males and females are alike in plumage and both sing. One individual that I secured, while but slightly wounded, gave a splendid exhibition of its power of song as a result of, or under the influence of,

excitement and pain. A native boy I had with me begged to have the bird, and for several hours, while he was carrying it in his hand, the little creature sang almost continuously.*

This species is frequently kept as a cage bird.

In the series of forty-eight skins secured there are twenty-seven males and twenty-one females; twenty-eight are in the black plumage of the fully adult bird, the remainder are in mixed plumage.

31. *Quiscalus niger* (Bodd.). CHINCHILING—Comparatively few birds of this species were seen. Only thirteen specimens were collected, all coming from three localities, Catare, Aguacate and San Domingo City. None were seen at the other localities visited. The eye is light straw yellow.

32. *Corvus leucognaphalus* Daud. CUERVO—The relative scarcity or abundance of this species in any locality depends chiefly on the season and on the ripening of certain fruits on which they feed. Immense flocks are found together. They are very noisy, but the call note is very different from anything I have heard before. The flesh is good eating, having a very pleasant flavor, much like that of certain species of wild pigeons.

The eye in some examples I found to be light red brown, and in others a bright orange red.

33. *Corvus solitarius* Wurt. CAO—Seen only at Maniel, where great noisy flocks were found together. The cry differs somewhat from that of the preceding species, and resembles more the chattering of some species of parrots.

34. *Elainia cherriei* Cory†—Only three specimens of this new flycatcher were secured. The type, a male, was taken at Catare January 31, and two females, taken higher up in the mountains, at Aguacate, on the 22d and 27th of February respectively.

The female is exactly similar to the male.

No individuals were seen except the three that were collected.

35. *Pitangus gabbii* Lawr.—Only one specimen collected. Taken at Honduras, April 2. Not noted at other points.

Bill, legs and feet black; eye dusky.

36. *Blacicus hispaniolensis* (Bryant).—Found distributed in all the localities visited by me, but far more common high up in

*Mr. Chapman, in his "Notes on Birds and Mammals, Observed near Trinidad, Cuba," gives a similar instance of "song as a result of excitement" in the case of *Icterus hypomelas*. Bull. Am. Mus. Nat. Hist., Vol. IV, No. 1, p. 306.

†Auk, Vol. XII, 1895, p. 279.

the mountains than down near the coast. Frequents the low scrub timber; seldom seen more than fifteen or twenty feet from the ground. Sometimes found deep in the dark forest and again in the low trees far out on the savannas.

37. *Myiarchus dominicensis* *Bryant*. MANUELITA; CABE-
SON—Tolerably common. Observed in all the localities visited,
but most common near the coast. Fifty-three specimens were
secured.

38. *Tyrannus dominicensis* (*Gmel.*). PE-TIGRE—Twenty-
three specimens were collected. Apparently not common.

39. *Antrostomus carolinensis* (*Gm.*). QUIERO-BEBER; QUE-
RE-BE-BE.—Only one specimen collected, Catare, February 3, but
often heard on clear evenings.

40. *Chaetura zonaris* (*Shaw*).—One specimen was taken at
San Domingo City. Great flocks were often observed sailing about,
especially toward dusk, but ordinarily they were out of range. This
is, I believe, the first record of a specimen of this species having
been actually taken in San Domingo.

41. *Lampornis dominicus* (*Linn.*). ZUMBADOR, DOCTOR BIRD—
Tolerably common at all localities visited.

42. *Mellisuga minima* (*Linn.*). ZUMBADORCITO — Common
enough but very difficult to collect. In the first place, one is shoot-
ing at an exceedingly small mark, and next, if your bird does fall, the
chances are greatly against your finding the little bunch of feathers
amid the thicket of leaves in the dense undergrowth that everywhere
covers the ground. Both the male and female "sing," their favorite
resort for this performance seeming to be the topmost branch of some
dead leafless tree-top, where, for long intervals, the birds may be
seen and heard. The head seems to be thrown back and turned from
side to side, with a rather short, quick jerky movement as the sharp,
high-pitched "cheep-cheep-cheep" notes are uttered in quick suc-
cession.

43. *Sporadinus elegans* (*Vieill.*). ZUMBADOR—This species
of humming bird was not common, and was only observed in two
localities, Catare and Aguacate. I collected sixteen specimens. All
were taken in the darkest parts of the forest, low down, from six to
ten feet from the ground. The two foregoing species seem to like

bright sunshine and high up at the edges of clearings or in the open. But the present species was not once seen beyond the confines of the endless shade of the thick forest.

44. *Temnotrogon roseigaster* (Vieill.). CALANDRE—I only found the San Domingo Trogon in one locality, Aguacate. These eight specimens were collected high up in the mountains; all are adult.

45. *Crotophaga ani* Linn. JUDIO—Common.

46. *Saurothera dominicensis* Lafr. BOBO.—One of the most abundant and conspicuous of the birds of San Domingo, found everywhere from the coast to the tops of the mountains, and apparently as common in one locality as in another. Eighty specimens were collected, with examples from all the points visited.

47. *Coccyzus americanus* (Linn.)—This is, I believe, the first record of the finding of the yellow-billed Cuckoo in San Domingo. It is probably not a permanent resident, as no individuals were seen or heard until the first of May, when it suddenly became common at Santo Domingo City. Here, in three days, the 2d, 3d and 4th of May, I collected ten specimens, five males and five females. While I can not consider the bird a resident, it is somewhat curious that in all of the females collected the ovaries were considerably enlarged and the oviduct more or less swollen, while in one example I took an egg from the oviduct that would have been deposited in one or two days! Evidently *C. americanus* breeds in San Domingo, but do birds that breed here ever come as far north as the United States?

48. *Coccyzus minor* (Gmel.). MONTERO—This bird is only tolerably common in the coast district, while back in the interior I did not meet with it above an altitude of between six and eight hundred feet.

49. *Hyetornis fieldi** Cory.—Five specimens of this handsome new cuckoo were collected; two came from Honduras and three from Maniel. It was not observed in any other locality. I was unable to make any notes in regard to the habits of the new bird, owing to the fact that on the three occasions on which individuals were seen, and when the five examples were secured, I was kept out of breath tearing through the underbrush trying to keep my bird in sight. But in manner of flight and in the peculiar way of running along the limbs of the trees, where it alights, one is impressed with the similarity to

**Hyetornis fieldi* sp. nov. Cory, Auk., Vol. XII, 1895, p. 278.

Piaya cayana mehleri of Central America, where the latter bird is known as Pajaro Ardilla (squirrel bird). From my note book, under date of March 29, being the first morning I had met with *H. fieldi*, I take the following observation: The notes or call is very different from that of any of the cuckoos with which I am familiar, and I can only liken it to the croaking of some hoarse frog.

In fresh specimens the maxilla and point of the mandible is black; eye dusky; feet, legs and basal part of mandible plumbeous.

The females seem to average a little larger than the males as indicated by the measurements of the five specimens given herewith:

Field Museum Catalogue No.	Sex.	Locality.	Tail.	Wing.	Tarsus.	Exposed Culmen.
1436	♀	Maniel, S. D.	11.50	7.25	1.63	1.70
1439	♀	Honduras, S. D.	10.50	6.75	1.65	1.50
1437*	♂	Maniel, S. D.	10.50	6.50	1.50	1.30
1438	♂	Maniel, S. D.	10.00	6.25	1.50	1.30
1440	♂	Honduras, S. D.	10.25	6.25	1.33	1.30

All the species of cuckoos found in San Domingo are esteemed a table delicacy by the natives, and for the sick the flesh of the "Bobo" or "Mantero" is a sure cure.

50. *Ceryle alcyon* (Linn.).—The Belted Kingfisher was frequently seen along the water courses near the coast.

51. *Todus angustirostris* Lafr. PAJARO VERDE.—Quite abundant, especially at points visited in the interior.

52. *Todus subulatus* Gould. PAJARO VERDE.—This, the larger of the two forms of Todies in San Domingo, is even more abundant than the preceding species, and is more evenly distributed, apparently being equally common both on the coast and in the interior.

With both species the food appears to consist exclusively of insects. The prey is usually, if not always, taken on the wing, after the manner of a true flycatcher. Large insects are held in the bill, and their little captor hammers its victims on the branch chosen for a resting place until the legs are broken off and the hard parts of the body are so broken up as to not interfere with swallowing.

53. *Nesocittes micromegas* (Sundev.). CARPINTERO.—Twenty-five specimens of this little woodpecker were taken, but it is far from being a common species. It was only observed at San

*Type.

Domingo City, Catara and Aguacate. While not particularly watchful and shy the inconspicuous colors and somewhat modest and retiring habits and notes rarely heard render this one of the least noticeable of San Domingo's woodland birds. In actions this species is often very like some of the warblers, being also of about the same size. It hops along the limbs and explores nooks and crevices between the branches seemingly to prefer being right side up, yet when occasion requires it will be seen diligently working away on the underside of some limb. Sometimes this little "carpenter" would be seen at the very tops of the forest trees, where I could only identify my bird by the use of my field glasses, and again I would find him hopping about in the brushwood a few inches from the ground.

In freshly killed specimens the eye is sometimes carmine, sometimes reddish brown; the feet and legs are olive plumbeous; bill dusky with the lower mandible plumbeous at the base.

54. *Chloronerpes striatus* (Müll.). CARPINTERO—One of the most abundant birds in San Domingo, equally distributed both in the mountainous and coast districts. This species was the subject of many complaints from the natives, from the country people, all declaring that it was impossible to have oranges and "carpinteros" at the same time. As soon as the oranges show the least sign of ripening they are immediately attacked by the woodpeckers, and in a very short time there is nothing remains but a shrivelling, "bloodless" orange peel. This woodpecker is also very destructive to the Royal Palm—a fact adding greatly to his already bad name—filling the green growing trunk so full of holes as finally to cause its death. This bird seems to make its nest by preference in the stems of the Royal Palm, and, in fact, I do not now remember having seen a woodpecker hole in any other species of tree while in San Domingo. But in addition to nesting in the Royal Palm, a great many holes are drilled apparently without any view toward housekeeping, or certainly with no other object than filling the pantry. *C. striatus* is a sap sucker and taps the Royal Palm for his beverage.

The eye in life is orange yellow.

55. *Conurus chloropterus* (Souancé). PERIQUITO — While from the accounts of the natives the San Domingo Paroquet must at some seasons be very abundant, yet I saw very few, and only four specimens were taken. It is gregarious and its presence or absence at any particular time or place depends probably on the food supply, which is again controlled by the seasons which vary much in different parts of the island.

56. *Amazona sallaei* (Sch.). COTORRO—The presence or absence of this species, as with the preceding, in particular locality or time must depend chiefly, if not wholly, on seasonal changes as influencing the food supply. It is gregarious and very noisy, but at the same time very watchful and only approached with difficulty and extreme caution. I saw several flocks that must have contained at least 500 individuals each.

This species is quite a good deal sought after by the natives for food.

57. *Speotyto cunicularia dominicensis* Cory.—Tu-cu. Only a single specimen of Burrowing Owl was secured. This was taken in the barren, cacti-covered region about Honduras. The inhabitants informed me it was quite common, but I did not again meet with the species.

58. *Rupornis ridgwayi* Cory. GUARAGUAO—Although no examples were secured I frequently saw this hawk sailing about over the tree tops or perched on some inaccessible crag or dead branch in the mountains or along the streams.

If the stories of the natives are to be relied upon this species is a great chicken thief.

59. *Accipiter fringilloides* Vig. GUARAGUAO DE CIERRO; SAN NICOLA; HARPON—Among the natives I found as many names for this handsome little hawk as I secured specimens. I learned nothing regarding the habits save from the stomach contents of my three specimens, which indicated a somewhat varied taste, parts of large insects, small lizard's and bird's feet and feathers being mixed together.

My three skins include an adult male and female and a young male.

The bird described and figured by Professor Cory in his "Birds of Hayti and San Domingo" and again described in the "Birds of the West Indies," is a *young* female. The adult female is quite different and as I believe no detailed description of the adult of this species has appeared, at least not in English since that made by Mr. Lawrence in May, 1860 (Annals of the New York Lyceum of Natural History) it may not be out of place to here append the descriptions of my specimens.

Adult female, No. 1843, Field Columbian Museum. Honduras, San Domingo, W. I., April 2, 1895: Above bluish slate color, slightly darker on the head. Concealed bases of feathers of the back *not*

marked with white. Tail brownish plumbeous crossed by four, not very clearly defined, dusky bands (five showing on the outermost pair of rectrices) and narrowly tipped with white. The primaries and greater wing coverts are dusky brownish with a shading of slate or plumbeous. The sides of the head (below the eye) and neck are light chestnut brown without markings. Chin and throat whitish, with a very light shading of brownish chestnut, and the shafts of the feathers dusky brownish or blackish. The remaining lower parts are white transversely marked with narrow wood brown bands on the breast, belly, sides of body and tibiae; thickest and most sharply defined on the upper breast, becoming farther apart and less distinct posteriorly, finally disappearing on the crissum and under tail coverts, which are immaculate. The under surface of the wing is white barred with dusky brown. In the fresh bird the bill is dusky at tip and plumbeous at the base; cere, legs and feet olive green; eye lemon yellow; claws black.

Wing, 7.10; tail, 6.50; tarsus, 2.00.

Adult male. No. 1842, Field Columbian Museum. Honduras, San Domingo, W. I., April 2, 1895. Similar to the female, but colors brighter, and the transverse banding below is in rather bright chestnut instead of wood brown. The male is considerably smaller, as shown by the following measurements:

Wing, 6.12; tail, 5.40; tarsus, 1.80.

Young male. No. 1841, Field Columbian Museum. Catara, San Domingo, W. I., Feb. 6, 1895. Above, dusky brownish, the feathers tipped and edged with russet. Feathers of the hind neck marked with white basally; feathers of the back *without* concealed white markings. Sides of face and neck buffy brownish streaked with dusky brownish or blackish shaft lines. Chin and upper throat whitish with a slightly buffy shading marked with dusky brownish shaft lines. Remaining lower parts white marked with irregular longitudinal shaft streaks of a dark wood brown color, and that becoming narrower and finally obsolete along the sides and lower breast. The crissum and under tail coverts are pure white. The tibiae are transversely barred with dusky brownish.

Wing, 5.85; tail, 5.25; tarsus, 1.80.

60. *Falco dominicensis Gmel.*—Individuals probably belonging to this species were frequently seen while riding over the savannas, but none were collected.

61. *Columba leucocephala Linn.*—Immense numbers of the White-headed Pigeon were being brought into the markets of San Domingo City during the first week of May.

62. *Columba corensis* *Gmel.*—This species is most abundant in the mountainous districts, rarely, if ever, descending to the coast. It is the largest of the pigeons found on the island, and is much sought after for food; but from being constantly hunted it has become very shy and difficult to approach.

In life the eyelids and eye are yellowish orange red; base of bill, feet and legs maroon.

63. *Zenaidura macroura* (*Linn.*). PALOMA COLITA—The Mourning Dove was not at all uncommon in the vicinity of San Cristobal, Honduras and Maniel.

64. *Zenaida zenaida* (*Bonap.*). ROLON—This handsome species is resident and quite common in San Domingo in the coast districts, but I believe is never found in the high interior.

65. *Melopelia leucoptera* (*Linn.*)—I secured a single specimen of the White-winged Dove high up in the mountains at the top of Mount "La Laguneta." Several others were seen in the same locality.

66. *Columbigallina passerina* (*Linn.*)—Quite common, especially near the coast.

67. *Geotrygon montana* (*Linn.*)—Tolerably common, but I never met with "flocks," as is indicated by Professor Cory, in "Birds of Hayti and San Domingo," p. 132. Very rarely did I find more than two together, and ordinarily individuals were found singly. It is more abundant in the higher altitudes and rarely met with near the coast.

68. *Geotrygon martinica* (*Gmel.*)—I saw a single example of this beautiful dove that had been killed by a native at Aguacate. However, as the bird did not come under my observation until after a good share of the feathers had been removed, I did not secure a specimen.

69. *Colinus cubanensis* (*Gundl.*)—The Cuban Quail was introduced into San Domingo by an American sugar planter by the name of Bass, about six years ago. It has increased very rapidly, and now for a good many miles around San Domingo City flocks of from ten to twenty-five are frequently met with.

Unfortunately, the mongoose has been imported from Jamaica and it is probable that in a short time the quail will succumb to this pest.

70. *Ædicnemus dominicensis* Cory. BOUKARA—Frequently met with in the houses of the natives, where they are kept to destroy the scorpions, centipedes, cockroaches, etc.

71. *Ægialitis vocifera* (Linn.)—During my stay in San Domingo I found the Killdee fairly common along the water courses near the coast, and indeed it is probably a resident breeding bird. The ovaries and oviducts of specimens taken during March indicated that the birds were breeding and I took a nearly fully developed egg from the oviduct of one killed March 24.

72. *Totanus solitarius* (Wils.)—Met with on two occasions only, March 16 and April 27, near San Domingo City along the Ozama River.

73. *Actitis macularia* (Linn.)—Noted at all the points visited, but not common.

74. *Ardea herodias* Linn.—Individuals were frequently noted along the shores of the Ozama River, near San Domingo City, but none were collected.

75. *Ardea cærulea* Linn.—Only one specimen was collected, but it is not uncommon along many of the water courses, especially near the coast.

76. *Ardea virescens* Linn.—MARTINETE. Quite common in all suitable localities.

77. *Nycticorax violacens* (Linn.)—Seen on several occasions near San Domingo City on the Ozama River.

78. *Jacana spinosa* (Linn.)—Quite common along the Ozama River. Young downy birds were found with the parents April 26.

In freshly killed birds the shield, spurs and bill are orange yellow; base of maxilla blue gray; eye dusky; feet and legs dusky olive.

79. *Fulica americana* Gmel.—Frequently seen near the river banks and along the lagoons.

80. *Dendrocygna arborea* (Linn.). YAGUASA—This is a resident species and not uncommon in some localities.

81. *Pelecanus fuscus* Linn.—Quite a good many were seen in the bay of Samana, but not noted at any other point along the coast.

82. *Phaethon flavirostris* Brandt. — Frequently seen along the coast. It is resident. April 19 two young birds and an adult female were brought to me at San Domingo City.

83. *Podilymbus podiceps* (Linn.)—One specimen was taken on the Ozama River, near San Domingo City, April 26, and quite a number were seen. This is, I believe, the first record of this species having been taken in San Domingo or Hayti.

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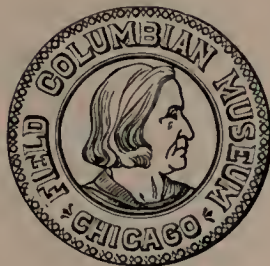
CATALOGUE OF A COLLECTION
OF BIRDS OBTAINED BY THE
EXPEDITION INTO
SOMALI-LAND.

BY

D. G. ELLIOT, F. R. S. E.

C. B. CORY,

Curator of Department.



CHICAGO, U. S. A.

February, 1897.

CATALOGUE OF A COLLECTION OF BIRDS OBTAINED BY THE
RECENT EXPEDITION INTO SOMALI-LAND, AUTHORIZED
AND EQUIPPED BY THE FIELD COLUMBIAN MUSEUM,
WITH DESCRIPTIONS OF NEW SPECIES. BY D. G. ELLIOT,
F. R. S. E.

The following species were obtained during the travels of myself and party throughout Somali-land into Ogaden. The main object of the expedition was to procure specimens of the mammals inhabiting the country, and I could give but little attention to the birds, much to my regret, but I endeavored to obtain as many species as possible without attempting to gather a series of any one. This will account for the small number of specimens belonging to any one species. It was not that they were difficult to collect, for I never was in a land where birds were more numerous and tame, and an expedition properly equipped for bird collecting, could procure a very large series of specimens in a comparatively short time. In accordance with the custom prevailing in the Field Columbian Museum, this collection should have been handed over to the Department of Ornithology, but Professor C. B. Cory, the Curator, is at present absent in Florida, and has requested me to determine the species, and publish the list. In order to facilitate comparison of the lists, I have followed in this one the arrangement adopted by Dr. Sharpe in his catalogue of the birds obtained by Dr. Donaldson Smith in his journey to Lake Rudolph. I am indebted to my friend, Dr. Sharpe, for the privilege of access to the British Museum collection, for the purpose of comparing the following species with the specimens in the great series of that institution:

ORDER PASSERES.

FAM. CORVIDÆ.

1. *Corvus edithæ*.

Corvus edithæ, Lort Phillips, Bull. Ornith. Club, iv, p. xxxvi.
—Id., Ibis, p. 383 (1895).

♂ Laferug.

♀ Higlileh, Ogaden.

This small crow was seen at various places during the trip, such as Deregodleh, Laferug, Higlileh in Ogaden, etc. It was

at once recognizable, even if not in sight, by its entirely different caw, quite unlike that uttered by the other crows, and when flying, the tail extending far beyond the secondaries, made the bird quite conspicuous, when in company with individuals of the following species.

2. *Rhinocorax affinis*.

Corvus affinis. Rüpp. Neue Wirb., p. 20, Taf. 10, fig. 2. Sharpe, Cat. B. Brit. Mus., Vol. III, p. 46 (1877).

♂ ♂ ♀ Berbera.

This crow was very plentiful in many parts of Guban and Ogo as well as in Ogaden, and could always be recognized when on the wing by its long secondaries, which extended over two-thirds the length of the tail. It was common at Berbera, and the species was represented in about every place in which any crows were seen. It was quite tame like most birds in Somali-land, and there was no difficulty in obtaining specimens. One peculiarity of this species and of the preceding, and one I do not remember to have noticed among other crows, was its habit of soaring. A number would rise in the air, generally in the middle of the day when the heat was excessive, and ascend in more or less extensive circles, until they became mere specks in the sky or disappeared altogether. Often during this performance they would join, or be joined by, vultures, eagles or hawks, and then the entire company would sail along, circling as they went, the crows cutting across the paths of their large companions in utter disregard of their movements, or without apparent fear of a collision. While thus soaring I never noticed any movement of the wings, the birds propelling themselves onward and upward in the same mysterious manner as is observed of the birds of prey when similarly engaged.

FAM. STURNIDÆ.

3. *Dilophus carunculatus*.

Gracula carunculata. Gm. Syst. Nat., Vol. I, p. 399 (1788).

Dilophus carunculatus. Heugl. Orn., N. O., Afr., Vol. I, p. 529. Sharpe, Cat. B. Brit. Mus., Vol. XIII, p. 61 (1890).

♂ ♂ Toyo Plain.

This curious starling was only seen twice, at our camp at Gelalo in the middle of Toyo Plain, and again, a flock of them, on the southern edge of the Haud. They were rather shy and approached our camp in order to drink at the rain pools which

happened to be there. In the small flock that appeared at Gelalo there was one female, recognized by the absence of wattles, but we were not able to secure her. The individuals busied themselves upon the ground apparently searching for seeds and insects, probably chiefly the latter, and on being approached, flew rapidly for a short distance and alighted on the ground, or in one of the thorn trees near our tents. The wattles were very conspicuous at all times, the two pendant from the throat flapping about as the birds moved their heads, while the two on top of the crown stood upright.

FAM. EULABETIDÆ.

4. *Cosmopsarus regius*.

Cosmopsarus regius Shelley, *Ibis*, p. 411 (1885).

♂ ♀ Adadleh.

♂ juv. The Hand.

♀ ♀ Dagahbur.

This beautiful creature known to us as the *Satin Bird*, was not uncommon at various localities in both Guban, near the Golis range, and in Ogo. I first met with it in the forest at Mandera, and it became more plentiful as we proceeded south of the mountains. It was always a most conspicuous object among the trees, its brilliant plumage flashing in the rays of the sun. One peculiar effect I often noticed was that when flying the rich yellow underparts appeared red, and I would think I had a second species until I took the specimen in my hand. I never could account for this optical illusion, for although specimens vary greatly in the depth of the coloring on breast and lower parts generally, there is certainly no red anywhere on the bird's plumage, the nearest approach to it being the metallic purple hue beneath the throat. The species was wilder than most of the birds met with, and it was not always easy to approach very near. When flying it was a graceful object as it floated in the air with the long tail spread out to its fullest extent, and contrasting strongly in the brilliant sunlight in its pale bronze hue with the metallic blues and greens of the wings and back. Altogether it is probably the most beautiful bird as yet known to inhabit Somali-land.

5. *Amydrus blythii*.

Amydrus blythii. Hartl., *Jour. f. Orn.*, p. 32 (1859). Sharpe, *Cat. B. Brit. Mus.*, Vol. XIII, p. 164 (1890).

♀ Jerato Pass. Golis Range.

I only met with this species once, at the Jerato Pass, going up from Tug Manderu to the top of the range. It goes in flocks of a dozen or more individuals, and usually keeps high upon the mountain side, and is very wary and difficult to approach. When flying the chestnut color on the wings is displayed to great advantage, and the birds are most attractive objects. I think it is a rare species and very local in its habitat. It usually frequents the tops of the highest trees, and the few times I saw the birds on bushes near the ground I only had a rifle with me, and so could not procure any specimens.

6. *Heteropsar albicapillus*.

Spreo albicapillus. Blyth, Jour. Asiat. Soc. Beng., Vol. XXIV, p. 301 (1855).

Heteropsar albicapillus. Sharpe, Cat. B. Brit. Mus., Vol. XXXI, p. 186 (1890).

♂ ♂ Toyo Plain.

Not uncommon, very frequently staying about the camp, quite tame and unsuspicious.

7. *Spreo shelleyi*.

Spreo shelleyi. Sharpe, Cat. B. Brit. Mus., Vol. XIII, p. 190 (1890).

♂ ♂ The Haud.

Only seen on the high plateau, and apparently nowhere very abundant. I don't remember ever seeing it loitering in and about the camp, as is the habit of the succeeding species, and, so far as I have observed, it goes only in small flocks.

8. *Spreo superbus*.

Notauges superbus. Rüpp, Syst. Uebers, pp. 65, 75; Taf. 26 (1845).

Spreo superbus. Sharpe, Cat. B. Brit. Mus., Vol. XII, p. 189 (1890).

♂ Laferug.

This beautiful bird, resplendent in its metallic coloring, was one of the commonest species, especially on the high plateau. It frequently goes in flocks of considerable size, has a short pleasant song, and was a most familiar visitor to the camp, coming about the tents quite fearlessly seeking for food. It has such a lovely plumage and pretty ways that it was always welcome, its white eyes gazing up at you from out the black feathers of the head, with a very peculiar effect.

FAM. BUPHAGIDÆ.

9. *Buphaga erythrorhynchus*.

Buphaga erythrorhynchus. Stanl. in Salt's Voy. Abyss., App. p. 59 (1814). Sharpe, Cat. B. Brit. Mus., Vol. XIII, p. 196 (1890).

♂ ♂ ♀ Higileh.

♀ Le Gud.

This species resorts to the bodies of camels and cattle, running all over them in the manner of a woodpecker on a tree trunk. They search for ticks which infest the four-footed creatures, and often pick at sore places and keep them from healing. They alight anywhere they take a fancy, on the head or legs, or any part of the body, moving about with the greatest facility, their heads as often pointing downward as any other way. The camels do not seem to pay much attention to them, and I have frequently seen one of these birds investigating the inside of an animal's ear and pulling at the insect found there, the camel or cow, as the case might be, showing no objection to the treatment it was receiving. If startled the flock departs for a short time, and then returns to renew operations.

FAM. DICRURIDÆ.

10. *Buchanga assimilis*.

Buchanga assimilis. Bechst, Lath. Allg. Uebers, Vög., Vol. II, p. 562. Sharpe, Cat. B. Brit. Mus., Vol. III, p. 247 (1877).

♀ Le Gud.

♂ Hullier.

♂ Marodijeh.

Frequently seen upon the plateau singly or in pairs.

FAM. ORIOLIDÆ.

11. *Oriolus larvatus*.

Oriolus larvatus. Licht, Verz. Doubl., p. 20. Sharpe, Cat. B. Brit. Mus., Vol. III, p. 217 (1890).

♂ Adadleh.

♂ juv. Boholgashan.

The only specimens met with on the journey. They were probably migrating.

FAM. PLOCEIDÆ.

12. *Linura fischeri*.

Linura fischeri. Reichen, Orn. Centralbl., p. 91 (1882). Sharpe, Cat. B. Brit. Mus., Vol. XIII, p. 210 (1890).

♂ Hullier.

13. *Quelea æthiopica*.

Hyphantica æthiopica. Heugl., Orn. N. O. Afr., Vol. I, pt. 2, p. 543 (1870).

Quelea æthiopica. Salv., Ann. Mus., Gen. (2), Vol. I, p. 193 (1884). Sharpe, Cat. B. Brit. Mus., Vol. XIII, p. 259 (1890).

♂ ♂ ♂ ♂ ♂ Marodijeh.

♀ ♀ This weaver bird was frequently seen in large flocks on the plateau. It would sometimes roost in great numbers near the camp in some tree overgrown with vines which afforded a thick shelter. At the place where our specimens were collected a large number were shot and served for breakfast the next morning, and were as nice a morsel as is our own reed or rice bird, the much persecuted Bob-o-link.

14. *Ædemosyne cantans*.

Loxia cantans. Gm. Syst. Nat., Vol. I, p. 859 (1788).

Aidemosyne cantans. Sharpe, Cat. B. Brit. Mus., Vol. XIII, p. 371 (1890).

♀ Hullier.

15. *Estrellda rhodopyga*.

Estrellda rhodopyga. Sund., Æfv. K. Vet.-Akad. Förh. Stockh., p. 126 (1850). Sharpe, Cat. B. Brit. Mus., Vol. XIII, p. 396 (1890).

♂ ♂ Hullieh.

♀ ♀ Hullieh.

o? Hullieh.

16. *Zonogastris melba affinis*, subsp. nov.

♂ ♂ Hersi Barri, Ogaden.

This seems to be the East African form of *Z. melba*, but differing from that species in having the under tail coverts conspicuously barred, the white spots on the breast being clearly perceptible through the overlying yellow color, and the red of the throat and forehead being deeper.

Its distribution is apparently from Manda Island or vicinity on the coast, through Somali-land as far as known, and extending westward to Lake Albert Nyanza, whence a specimen obtained by Emin Pasha at Kibiro, near the lake was received at the British Museum and is almost identical with my examples so far as the bars on the under tail coverts are concerned, but the red of the head and throat is not so dark, and the yellow of the breast not so extensive. A specimen in the British Museum collection from Manda Island, obtained by Jackson, has an indication of bars on the under tail coverts, while another from Lamoo, sent by Kirk, has no bars whatever. The vicinity of Lamoo then would seem to be the northern and southern boundary of the two forms which here meet on the East coast, but their distribution in the interior has yet to be ascertained.

Z. sondaensis, Sharpe, from the Soudan to Bogos-land, is intermediate between *Z. melba* and *Z. m. affinis*, having just a faint indication of bars on the under tail coverts, and would seem to connect the two forms. The single specimen from Lado, included by Sharpe in his *Z. sondaensis*, undoubtedly belongs to the present sub-species and not to his new form, which, therefore, as far as known, does not extend south of Bogos-land.

17. *Granatina ianthinogastra*.

Uræginthus ianthinogastra. Reichen, Orn. Centralbl., p. 114 (1879).

♂ Le Gud.

♂ Marodijeh.

♂ Hullier.

♀ Marodijeh.

♂ Haud.

A generally distributed species in Somali-land.

18. *Hyphantornis galbula*.

Hyphantornis galbula. Rüpp. Neue. Wirb., p. 92, pl. 32, fig. 2 (1835-40).

♂ Las Durban.

♂ ♂ Cabala.

o? Hullier.

Not uncommon in certain portions of the plateau.

19. *Dinemellia dinemelli*.

Textor dinemelli. Rüpp. Syst. Uebers, pp. 72, 76, pl. 30, (1845). Sharpe, Cat. B. Brit. Mus. Vol. XIII., p. 506 (1890).

♂ ♂ Hullier.

A common species, very conspicuous by its red rump and under tail coverts, and white and black plumage. It goes in flocks and is seen everywhere.

FAM. FRINGILLIDÆ.

20. *Petronia pyrgita*.

Xantholina pyrgita. Heugl., Orn. N. O. Afr., Vol. I, p. 627, pl. xxi, fig. 2.

Petronia pyrgita. Sharpe Cat. B. Brit. Mus. Vol. XII, p. 296 (1888).

♂ ♂ Hullieh.

♀ ♀ Hullieh.

o? Hullieh.

21. *Serinus maculicollis*.

Serinus maculicollis. Sharpe Bull. Brit. Orn. Club, iv, p. xli, (1895).

♂ ♂ Hullier.

♀ Hullier.

o? Hersi Barri, Ogaden.

This Finch first obtained by Dr. Donaldson Smith's Expedition was not very abundant anywhere, but evidently has considerable of a distribution, as the two places named above where I obtained it were nearly one hundred and fifty miles apart. It is apparently a very good species.

22. *Emberiza poliopleura*.

Fringillaria poliopleura. Salv., Ann. Mus. Civ. Genov. (2) VI, p. 269 (1888).

♂ Hullier.

♂ Haud.

Not a very uncommon bunting, especially about Hullier, which is a short distance east of Hargeisa.

23. *Fringillaria septemstriata*.

Emberiza septemstriata. Rüpp. Neue Wirb., Vog. p. 86, tab.

30, fig. 2 (1835-40). Sharpe, Cat. B. Brit. Mus., Vol. XII, p. 559 (1888).

♂ Hullier.

FAM. ALAUDIDÆ.

24. *Alaudula somalica*.

Alaudula somalica. Sharpe, Proc. Zool. Soc. p. 472 (1895).

♂ Silo Plain.

25. *Mirafra gilletti*.

Mirafra gilletti. Sharpe, Bull. Orn. Club. iv, p. xxix.

♂ Hullier.

26. *Mirafra intercedens*.

Mirafra intercedens. Reich., Ornith. Monat, p. 96, 1895.

♂ ♂ Dagahbur.

We only met with this species at Dagahbur in Ogaden, about twenty miles south of the Hand. It is apparently a very distinct species.

27. *Mirafra sharpii*, sp. nov.

♂ Silo Plain.

Head rufous, the feathers generally having a black spot at the tip. Nape and sides of neck dark rufous, feathers edged with pale buff. Back dark rufous or chestnut, feathers margined with buff and with a black subterminal V-shaped bar. Rump similar to back, upper tail coverts, brownish-black with gray margins, and a black spot near the tip. Wings have the innermost secondaries like the back, outer ones rufous for two-thirds their length, remaining portion pale brown, and a black line running parallel to the shaft near the margin of outer web; tips white. Primaries light chestnut for two-thirds their length, on outer quills, pale brown on remaining part. The chestnut color increases in extent on the inner primaries until the innermost is all chestnut with a blackish-brown tip; under wing coverts deep buff; primary coverts rufous. Central rectrices blackish-brown, mottled with black in the middle, grading into rufous towards the outer edges of the webs, which are margined with white, and an irregular black line runs along the web near its margin. Remainder of rectrices blackish-brown margined with white, but the outermost rectrix has the entire outer web pale buff. Supercili-

any stripe pale buff; ear coverts and cheeks white spotted and streaked with black. Throat and sides of neck white. Breast buff streaked and spotted with brownish-black, lower parts, flanks and under tail coverts pale buff inclining to white. Bill long, slender, horn color. Tarsi and feet flesh color. Irides brown. Total length, skin, 6.10 inches; wing, 4; tail, 3.50; culmen, .70; tarsus, 1.20. Only one specimen of this new form was obtained on the north side of Silo Plain. Possibly its nearest relative is *M. africana*, Smith, but it differs greatly from that species in all its ages. I compared this specimen with the large series of *africana* in the British Museum Collection, and from the adult it differs in its white throat, and the under parts buff tinged with white, these parts on *africana* being deep buff; while the coloring of the upper parts is in nowise alike. From the young of *africana* it differs in having more of a buff tinge beneath, and differently colored upper part, which in *africana juv.* is hoary gray, or dark brown, with central black stripes. The upper tail coverts in *africana juv.* are brown with narrow black central stripes, totally different from those of the present form. The primary coverts also in *M. sharpii* are entirely rufous, without any of the black streaks as in *africana*. I have pleasure in bestowing upon this new form the name of my friend, Dr. R. B. Sharpe, LL.D., of the British Museum.

28. *Galerita pallida*, sp. nov.

♂ Dagahbur.

♂ Hersi Barri, Ogaden.

Top of head pale rufous, each feather with a central black streak. Crest composed of a slender bunch of similarly colored narrow feathers .90 of an inch long, springing from the vicinity of the occiput; upper parts and wings dark buff, paler than the head, the feathers with black centers and whitish edges. Primaries dark brown, buff on outer edge of outer web, and three-fourths the edge of inner web, narrowing to a point as it goes towards the tip. Secondaries blackish brown with bright buff margins; under wing coverts rose color. Upper tail coverts buff with black central streaks. Tail black, margined and tipped with bright buff. Ear coverts and cheeks buff, streaked with black. Throat white; breast pale buff thickly spotted with black, almost forming a band below the throat. Under parts, flanks and under tail coverts pale buff inclining to white in the center

of the abdomen. Bill, maxilla horn color, mandible flesh color at base, horn color at tip. Tarsi and feet flesh color. Total length, skin, 6.40; wing, 3.90; tail, 2.80; culmen, .50; tarsus, .90 inches.

There is no species of *Galerita* known that is like this new form, perhaps the nearest being *G. malabarica*, Sonn; but it differs so greatly from that Indian species as to make a comparison of them quite unnecessary. Its back is so light colored as to render the bird somewhat difficult to see on the sandy soil, and the underparts strongly incline to white. The crest is rather long and slender, but the length varies I imagine among individuals, as those of the two specimens obtained, are not equal in this respect. They also vary in the color of the upper parts, the Hersi Barri specimen being the lighter, which is surprising as Dagahbur is a much more sandy and open locality.

29. *Ammomanes akeleyi*. sp. nov.

♂ ♂ Deragodleh.

♀ Hullier.

Front and top of head dark rufous brown forming a kind of cap, remaining part very dark ash-gray, a difficult shade to express so as to give the proper idea. Superciliary stripe from nostril to behind eye, buff. Rump golden buff. Wings same color as the back; secondaries dark ashy brown margined with ash-gray. Primaries dark brown, under wings, coverts, and greater part of inner webs of secondaries bright deep buff. Tail dark brown, outer web of outer rectrix pale rufous. Throat white; entire underparts buff inclining to white on center of abdomen. Bill yellow ochre, blackish on ridge and base of culmen. Irides brown. Feet and tarsus flesh color. Total length, 5; wing, 3.70; tail, 2.60; culmen, .70; tarsus, .80 inches.

This lark is an ally of *A. deserti*, but is somewhat smaller in its measurements, and considerably darker in color; and may be regarded as the Somali coast representative of the more widely dispersed species. I do not remember seeing it beyond Hullier on the plateau, and we first met with it at our second camp from Berbera, where the two males were procured. I have pleasure in naming this species after Mr. C. E. Akeley, my chief assistant, and head of the Taxidermist Department in the Museum.

FAM. MOTACILLIDÆ.

30. *Motacilla campestris*.

Motacilla campestris. Pall, Reis., Russ., Reichs., Vol. III, Anhang., p. 697 (1776). Sharpe, Cat. B. Brit. Mus., Vol. X, p. 510 (1885).

♂ Berbera.

Shot at Berbera in company with the two succeeding species:

31. *Motacilla borealis*.

Motacilla borealis. Sharpe, Cat. B. Brit. Mus., Vol. X, p. 522 (1885).

♂ Berbera.

Shot out of a flock at Berbera, the only place it was met with.

32. *Motacilla cinereicapilla*.

Motacilla cinereicapilla. Savi., Nuovo. Giorn. dei Letter, No. 57, p. 190. Id., Orn. Tosc., Vol. III, p. 216 (1831). Sharpe, Cat. B. Brit. Mus., Vol. X, p. 526 (1885).

♂ Berbera.

Obtained at the same time with the other species and I believe at the same shot. A large flock of these birds had come to drink at a rill escaping from a cistern close by, and I fired at them and procured these three species. It was the only time I saw them. The different species were all mingled together, maintaining no distinctive organization and I supposed there was but one, until I picked them up.

33. *Anthus sordidus*.

♂ ad. Hullier.

Anthus sordidus. Rüpp, Neue Wirb. Aves, p. 103, pl. 39, fig. 1 (1835). Sharpe, Cat. B. Brit. Mus., Vol. X, p. 560 (1885).

34. *Tmetothylacus tenellus*.

Macronyx tenellus. Cab. Jour. f. Ornith., pp. 205, 220, pl. 2, fig. 1 (1878).

♂ ♂ ♂ Hersi Barri, Ogaden.

Not uncommon in the vicinity of this camping place.

FAM. NECTARINIDÆ.

35. *Cinnyris osiris*.

Nectarinia osiris Finsch. Tr. Zool. Soc., Vol. VII, p. 230 (1870).

♂ Marodijeh.

♂ ♂ ♂ Le Gud.

♂ Hullier.

♀ Le Gud.

36. *Cinnyris albiventris*.

Nectarinia albiventris. Strickl., Contr. Orn., p. 42, pl. 86 (1852).

♂ Hersi Barri.

37. *Anthothreptes orientalis*.

Anthreptes orientalis. Hartl, Jour. f. Orn., p. 213 (1880).

♂ Le Gud.

♀ Hullier.

38. *Chalcomitra hunteri*.

Cinnyris hunteri. Shelley, Proc. Zool. Soc., p. 365, pl. xli, fig. 2, (1889).

♂ Hullier.

Not uncommon in this locality.

39. *Hedydipna metallica*.

Nectarinia metallica. Licht. Verz. Doubl., p. 15 (1823).

♂ Berbera.

♂ Laferug.

This beautiful sun bird was not uncommon.

FAM. ZOSTEROPIDÆ.

40. *Zosterops poliogaster*.

Zosterops poliogaster. Heugl., Ibis, p. 357, pl. 13 (1861).

♂ ♂ Boholgashan.

♀ Boholgashan.

We only saw this pretty little bird at this one locality.

FAM. PARIDÆ.

41. *Parus thruppi*.

Parus thruppi. Shelley, Ibis, p. 406, pl. xi, fig. 2 (1885).
James, Unkn. Horn. Af., p. 295, pl. vi, fig. 2.

♂ ♂ ♂ Le Gud.

♂ Hullier.

We met with this Tit as soon as we entered upon the plateau,

the localities given being near the Golis Range, the last one a short march from Hargeisa.

42. *Ægithalus musculus*.

Agithalus musculus. Hartl, Jour. f. Orn., p. 326 (1882).

♂ Haud. Iris brown.

Seldom seen, but probably it easily escapes recognition on account of its very small size.

FAM. LANIIDÆ.

43. *Lanius antinorii*.

Lanius antinorii. Salvad, Ann. Mus. Civ. Genov., Vol. XII, p. 316 (1878).

♀ Bodelch.

This was the only specimen taken of this shrike, although I saw many others, but they were not procured.

44. *Laniarius cruentus*.

Lanius cruentus. Hemp & Ehrenb, Symb. Phys., Fol. C, Tab. iii.

Dryoscopus cruentus. Heugl., Orn. N. O. Afr., Vol. IV, p. cxvi.

Laniarius cruentus. Gadow., Cat. B. Brit. Mus., Vol. VIII, p. 152 (1883).

♂ ♂ Hullier.

♀ ♀ ♀ Hullier.

This beautiful shrike was quite common on various parts of the elevated plateau, thus, contrary to Heuglin's opinion, proving it to be a bird of elevated districts and not restricted to the lowlands and the coast. It has a clear note that often betrays its presence, although its beautiful coloring always made it a conspicuous object.

45. *Dryoscopus funebris*.

Dryoscopus funebris. Hartl, Proc. Zool. Soc., p. 105 (1863).

♂ Hullier.

♀ ♀ Le Gud.

46. *Dryoscopus rufinuchalis*.

Dryoscopus rufinuchalis. Sharpe, Proc. Zool. Soc., p. 479 (1895).

♀ Higlileh.

This specimen has the forehead and forepart of the crown black, as mentioned by Dr. Sharpe in the case of Dr. Donaldson Smith's examples. Higlileh is just south of the Haud in Ogaden, which must be some distance from the localities given by Dr. Sharpe for his specimens, viz.: Dahulli and Torboo. I do not know where these named places are, but I know Dr. Smith was well on towards the Shebeyleh river, at the dates given, Sept. 16, and Nov. 25.

47. *Telephonus jamesi*.

Telephonus jamesi. Shelley, Ibis, p. 403, pl. x, fig. 2 (1885).
James, Unkn. Horn, Af., p. 291, pl. v, fig. 2.

♀ o? Hullier.

Iris brown. Legs gray.

48. *Nilaus capensis minor*.

Nilaus minor. Sharpe, Proc. Zool. Soc., p. 479 (1895).

♂ Laferug.

o? Le Gud.

This race of *N. capensis* was not at all uncommon, and was noticed in nearly every part of the country traversed by us, and its black and white plumage made it very conspicuous, whether at rest upon some bush or low tree, or when flying with straight and rapid course through the air.

49. *Prionops cristatus*.

Prionops cristatus. Sharpe, Ibis, p. 601 (1892).

♂ ♀ Haud.

♀ Higlileh.

Iris and eyelids golden yellow. Legs vermilion.

This curious bird was only met a few times by us, and then in flocks of some considerable size. It was apparently very restless, never remaining long in any one tree, but kept flying about uttering its shrill note. It was shy also, and did not permit a very near approach, and was an attractive object, its black and white plumage and red legs drawing one's attention quickly to it even if it was silent, which, however, was not often the case.

50. *Bradyornis rueppelli*.

Eurocephalis rueppelli. Bon. Rev. and Mag. Zool., p. 440 (1853). Gadow, Cat. B. Brit. Mus. Vol. III, p. 280 (1877).

♀ ♀ Hullier.

This fine species was of frequent occurrence, but seen usually singly or in pairs. Its white head and rump contrasting with its dark wings, made it rather a striking object in the air.

51. *Bradyornis pumillus*.

Bradyornis pumillus. Sharpe, Proc. Zool. Soc., p. 480 (1895).

♂ Laferug.

♂ ♂ Hullier.

FAM. SYLVIIDÆ.

52. *Eremomela flavicrissalis*.

Eremomela flavicrissalis. Sharpe, Proc. Zool. Soc., p. 481 (1895).

♀ ♀ Hullier.

♂ Dagahbur.

This little species was only observed on the two occasions when it was captured.

53. *Calemonastes simplex*.

Erythropygia simplex (Cab.) Sharpe, Cat. B., Brit. Mns. Vol. VII, p. 74 (1883).

♀ Marodijeh. Iris light brown.

This small bird is remarkable for its somewhat metallic voice.

54. *Sylviella isabellina*, sp. nov.

o? Le Gud.

Head, entire upper parts and tail dark slaty gray, with a greenish tinge; rump, buff; throat, whitish buff; flanks, dark buff; under parts, buffy white; wings, same color as back; bill, black; total length, skin, about 3.40; wing, 2.10; tail, 1.10; bill, .50 inch.

This species, which is apparently new, is nearest to *S. rufescens*, from South Africa, but instead of being dark buff beneath, as is that species, it is almost white, washed with buff. The type was the only individual obtained.

55. *Dryodromas smithii*.

Dryodromas smithii. Sharpe, Bull. B. O. C. iv, p. xxix.

♂ Hullier.

♂ Dagahbur.

This little species apparently has quite an extensive distribution, as the two localities where we obtained examples were about one hundred miles apart.

56. *Cisticola cisticola*.

Sylvia cisticola. Temm. Man. Orn. Vol. I, p. 228 (1820).

Cisticola cisticola. Sharpe, Cat. B., Brit. Mus. Vol. VII, p. 259 (1883).

o? Silo Plain.

57. *Cisticola dodsoni*.

Cisticola dodsoni. Sharpe, Bull. B. O. C. iv, p. xxix.

♂ Haud. Iris and legs light brown.

FAM. TURDIDÆ.

58. *Erythropygia leucoptera*.

Salicaria leucoptera. Rüpp. Syst. Uebers, p. 38, Taf. 15 (1845).

♂ Hullier.

♀ ♀ ♀ Hullier.

59. *Burnesia somalica* sp. nov.

♂ Las Durban.

♂ Dagahbur, Ogaden.

Head and upper parts, ashy brown; greater wing coverts and secondaries, ashy brown, edged with white; primaries, ashy brown; under wing coverts, white; tail, uniform ashy brown above, underneath blue-gray with a sub-terminal black bar and white tip; lores and eyebrows, white; sides of face and underparts white, tinged with buff on sides of body; bill black; total length, 5.90 inches; wing, 1.90; tail, 3; culmen, .40; tarsus, .90.

This bird does not seem particularly near any described species, being possibly closest to *B. socialis*, but there are too many striking differences to make it possible to confound the two.

60. *Ædon galactodes*.

Sylvia galactodes. Temm. Man. Orn. Vol. I, p. 182 (1820).

♂ Las Durban.

One specimen only of this species procured.

61. *Acrocephalus phragmitis*.

Sylvia phragmitis. Bechst. Orn. Taschenb., p. 186 (1802).

o? Las Durban.

62. *Acrocephalus streperus*.

Sylvia strepera. Veill. Nouv. Dist. d'Hist. Nat., Vol. XI, p. 182 (1817).

Acrocephalus streperus. Seebohm Cat. B., Brit. Mus. Vol. V, p. 102 (1881).

o? Las Durban.

63. *Hypolais languida*.

Curruca languida. Hemp. Ehrenb. Symb. Phys. Aves., Fol. ee (1833).

Hypolais languida. Seebohm, Cat. B., Brit. Mus. Vol. V, p. 80 (1881).

♂ Silo Plain.

The discovery of this specimen nearly in the middle of the Haud extends its distribution one hundred and thirty to forty miles farther south, as Mr. Phillips procured his single specimen at Berbera, and Dr. Smith does not seem to have obtained it on his expedition.

64. *Hypolais pallida*.

Curruca pallida. Hemp. Ehrenb. Symb. Phys. Aves., Fol. bb (1833).

Hypolais pallida. Seebohm, Cat. B., Brit. Mus. Vol. V, p. 82, (1881).

♀ ♀ Berbera.

65. *Saxicola phillipsi*.

Saxicola phillipsi. Shelley, Ibis, p. 404, pl. xii (1885). James, Unkn. Horn, Af., p. 293, pl. vii.

♂ ♂ juv. Hullier.

o? juv. Hullier.

♀ ad. Summer. Boholgashan. Iris dark brown.

Specimens in immature plumage were not uncommon at Hullier, but we did not get one in full, adult dress until we came to Boholgashan on our return journey from the Haud, and I believe the one obtained was the only one seen.

66. *Saxicola isabellina*.

Saxicola isabellina. Cretzs. Rüpp., Atlas, p. 52 (1826). Seebohm Cat. B., Brit. Mus., Vol. V, p. 399 (1881).

♀ Silo Plain.

67. *Myrmecocichla melanura*.

Saxicola melanura, Temm. Pl., Col. No. 257, fig. 2 (1824).

Myrmecocichla melanura. Seebohm, Cat. B., Brit. Mus., Vol. V, p. 361 (1880).

♂ Berbera.

♀ Las Durban.

FAM. TIMELIIDÆ.

68. *Argya aylmeri*.

Argya aylmeri. Shelley, in James, Unknown Horn of Afr., p. 293 pl. vi, fig. 1 (1888).

♂ ♂ Hullier.

♀ Hullier.

Bill, white; iris, cream color; bare skin about eye, bluish white; legs, light brown.

FAM. PYCNONOTIDÆ.

69. *Pycnonotus dodsoni*.

Pycnonotus dodsoni. Sharpe, Proc. Zool. Soc., p. 488 (1895).

♂ Hullier.

♀ Hullier.

♀ Higlileh, Ogaden.

Not an uncommon species upon the plateau, and as one specimen was procured by Dr. Smith at Lamoo, it would seem to go to the coast also, although I do not remember seeing it there. It goes in flocks, is tame and unsuspicious, and I have often watched individuals moving among the branches, seeking insects within a few feet of me, as I stood in the shade.

FAM. MUSCICAPIDÆ.

70. *Pachyprora bella*, sp. nov.

♂ Le Gud. Iris yellow.

♂ ♂ Hullier. Iris golden yellow.

♀ Hullier. Iris golden yellow.

o? Haud. Iris golden yellow.

Male—Head and back dark blue gray; two white spots on forehead; secondaries black, margined with white; primaries dark brown. Black stripe from bill, passing to nape and including

eye and sides of face, but is prevented from joining the black collar by the white of hind neck, which continues on until it joins the throat. Throat entirely white. A broad, blue-black band across the breast; remainder of under parts white; tail, blue black, outermost feather white on outer web, which continues to and includes the tip, and edges the inner web .40 of an inch from extreme end. Bill, tarsi and feet, black. Total length, 4.50; wings, 2.30; tail, 2; culmen, .50; tarsus, .80.

Female resembles the male, but has a chestnut band across the breast, instead of a blue-black one.

Two immature males from Le Gud and the Haud, respectively, are in the dress of the female.

This new species is nearest to *P. minulla* Bocage, but the male differs in having the black line on face interrupted, the white of hind neck, as described, joining the white throat and cutting off the black collar. In *P. minulla* there is no such interruption; the black on side of face and ear-coverts joins the black collar on the back. The female differs in the same manner.

71. *Parisoma böhmi*.

Parisoma böhmi. Reichen, Jour. f. Orn., p. 200 (1882).

♂ ♂ ♂ ♂ ? Hullier. Iris cream color.

♂ Daboya.

72. *Tersiphone cristata*.

Tersiphone cristata. Sharpe, Cat. B., Brit. Mus., Vol. IV, p. 354 (1879).

♂ juv. Gerenook. Ogaden. Eyelids, bill, and legs, bluish green. Iris brown.

We met this handsome species first here. An adult male and one or two immature males being the only ones seen.

ORDER PICIFORMES.

FAM. PICIDÆ.

73. *Dendropicus hemprichi*.

Picus hemprichi. H. Ehrenb. Symb. Phys. Aves, fol. r, p. 2 (1828).

Dendropicus hemprichi. Hargitt, Cat. B., Brit. Mus., Vol. XVIII, p. 299 (1890).

♂ ♂ Hullier. Iris red.

♀ Dagahbur.

A rather rare species, only met with a few times, and the male though seen was not obtained.

74. *Campothera nubica*.

Picus nubicus. Gm. Syst. Nat., p. 439 (1788).

Campothera nubica. Sharpe, Proc. Zool. Soc., p. 492 (1895).

♂ ♂ Hullier. Iris red.

♀ Hullier.

♂ Laferug.

A not uncommon species in certain parts of the country, but generally wild and not often permitting one to approach it closely, very different in this respect from the other feathered inhabitants of the land.

FAM. CAPITONIDÆ.

75. *Trachyphonus shelleyi*.

Trachyphonus erythrocephalus (nec Cab.). Shelley, Ibis, p. 394 (1885), ex Somali plateau. James, Unkn. Horn. Afr., p. 282, pl. ix.

Trachyphonus shelleyi. Hartl. Isis, pp. 105, 111, pl. v (1886). Sharpe, Proc. Zool. Soc., p. 493 (1895).

♂ Higlileh, Ogaden. Eyelids, feet and legs vermilion. Iris brown.

♀ Higlileh, Ogaden.

This species was not obtained until the Haud was passed and we had entered Ogaden. This or the succeeding species was seen by me in the country southeast of Toyo plain toward the territory of the Dolbahanti. *T. Shelleyi* was not common anywhere, and was met with generally in pairs. It appeared to be breeding, and usually made us aware of its presence by its loud, shrill voice, sounding almost like laughter. The attitudes of the males when near the females were very curious, and the birds both seemed to be in a state of great excitement, and paid but little attention to any one near at hand. Although not met with by me on the Haud, it seems to occur there, as Sharpe states (l. c.) that the specimen mentioned by Shelley (l. c.) was from the Somali plateau, meaning, I suppose, the Haud.

76. *Trachyphonus margaritatus*.

Buceo margaritatus. Cretzschm. Rüpp, Atlas. Vog., p. 30, pl. 20 (1826).

Trachyphonus margaritatus. Shelley, Cat. B. Brit. Mus., Vol. IX, p. 103 (1891).

♂ Robeleh.

♀ Robeleh.

Two specimens of this species were obtained at the above place on our return journey, and were the only ones seen that could be identified with certainty. They were sitting close together on a limb, and awoke the echoes with their loud, shrill cries, at the same time making the most absurd contortions of the neck, wings and tail, assuming very grotesque positions. So busily engaged were they with their own affairs, that they paid no attention whatever to Mr. Dodson as he approached them, and both birds were secured at one shot. These specimens differed so greatly from all those in the British Museum collection that at first I was inclined to regard them as representing a distinct species, but finally decided the differences shown would be merely incidental to a phase of plumage. The two examples are black upon the back, covered thickly with white spots, the tail also black, with broad yellowish-white bars going half way to the shaft. The specimens in the British Museum had the feathers much worn, and the black replaced by a dark brown, and the white spots were much fewer. It would be interesting to learn if the Somali bird also turns brown at any stage of its plumage, and loses the spots as the feathers become worn.

76. *Barbatula affinis*.

Barbatula affinis. Reichen, Orn. Centralb., p. 114 (1879), Shelley, Cat. B. Brit. Mus. p. 41 (1891).

♂ ♂ Hullier.

This little Barbet was seen occasionally from the northern limit of the Haud, southwards. It was not common at any time.

77. *Tricholæma stigmatothorax*.

Tricholæma stigmatothorax, Cab. J. f. Ornith., pp. 205, 240 (1878), Sharpe, Proc. Zool. Soc., p. 493 (1895).

♂ Le Gud.

ORDER PSITTACIFORMES.

FAM. PSITTACIDÆ.

78. *Pœocephalus rufiventris*.

Pionus rufiventris. Rüpp., Syst. Ueb., Vögel, N. O. Afr., pp. 83, 94, t. 32 (1845).

Pœocephalus rufiventris. Salv., Cat. B. Brit. Mus., Vol. XX, p. 372 (1891).

♂ Le Gud.

♂ Marodijeh.

♂ Hullier.

♂ juv. ♂ juv. Le Gud.

♀ ♀ Le Gud.

This pretty parrot was constantly met with after we reached Laferug. It goes in small flocks, is very active and restless, being always on the move, screaming both when flying or when in the tree tops. The male with his bright red abdomen is very conspicuous, and darts in and out among the trees like a flame, and is a very beautiful object, his bright underparts contrasting with the dark green foliage with fine effect. The flight is straight and very rapid, performed by quick beatings of the wings.

FAM. MUSOPHAGIDÆ.

79. *Schizorhis leucogaster*.

Chizœrhis leucogaster. Shelley, Cat. B. Brit. Mus. Vol. IX, p. 452 (1891). Rüpp. Proc. Zool. Soc., p. 9 (1842).

♂ ♂ juv. Haili.

♀ Haili.

This species was a very familiar object throughout our journey. Its large size, of course, made it very conspicuous, and its loud, harsh note resembling pǎǎp, pǎǎp, sometimes pǎw, pǎw, would disclose its presence even if the bird itself was hidden in the foliage. It goes singly or in parties of three or four, frequents the highest parts of the thorn trees, and walks among the branches, occasionally hopping from one to another. It flies with easy flappings of the wings, often sailing along for quite a distance, and with its crested head, long tail and pleasing coloring, is one of the attractive objects met with when journeying through the land.

ORDER CORACIIFORMES.

FAM. CORACIDÆ.

80. *Coracais lorti*.

Coracias lorti. Shelley Ibis., p. 399 (1885). Sharpe, Proc. Zool. Soc., p. 496 (1895).

o? ad. Laferug.

o? ad. Le Gud.

♀ ♀ ♀ Hullier.

This beautiful species was not at all uncommon, and many specimens could have been procured if I had been making a series. It generally was seen singly, sometimes in pairs, and would frequently sit upon a limb quietly gazing at the caravan as it passed by. When flying, the rich coloring of the back and wings made it a most beautiful object. It usually perched on a dead branch, if one was handy, and rather high up on a tree.

81. *Coracias nævius*.

Coracias nævius. Daud. *Traité.*, Vol. II., p. 258 (1800).
Sharpe *Cat. B. Brit. Mus.*, Vol. XVII, p. 24 (1892).

♀ Marodijeh.

This handsome roller, while not so plentiful as the preceding species, was not uncommon. Both birds are noisy and pugnacious, fighting almost any winged creature, even if much larger in size. It is not so often seen perhaps in the more open parts of the country as is *C. lorti*, but is very similar in its habits and, I should imagine, in its food also. On the wing it is not so handsome as its relative.

FAM. ALCEDINIDÆ.

82. *Halcyon chelicutensis*.

Alcedo chelicuti. Stanley, *Salt's Exp. Abyss.*, App., p. lvi (1834).

Halcyon chelicutensis. Sharpe, *Cat. B. Brit. Mus.*, p. 239, Vol. XVII (1892).

♂ juv. Marodijeh.

The only specimen procured.

FAM. BUCEROTIDÆ.

83. *Lophoceros erythrorhynchus*.

Buceros erythrorhynchus. Temm. *Pl. Col.*, Vol. II, sp. 19 (Text), (1823).

Lophoceros erythrorhynchus. Ogilvie-Grant, *Cat. B. Brit. Mus.*, Vol. XVII, p. 409 (1892).

Lophoceros medianus. Sharpe, *Proc. Zool. Soc.*, p. 408 (1895).

♂ Marodijeh.

♀ Hullier.

This Hornbill and the next species were very common every where we traveled. It is a noisy bird, and without its voice attention would be attracted to it by the white and black hues of the plumage, which make it a very conspicuous object when on the wing. It flies low, by repeated flappings and sailings, and when about to alight upon some tree, lowers its flight just before reaching its goal, and then rises in a graceful curve to the desired perch. I only brought the two specimens back, and I regret that more were not preserved, as they seem to throw a considerable doubt upon the validity of *L. medianus*, Sharpe. I compared my examples with Sharpe's type, and came to the conclusion that his bird was only a female of *L. erythrorhynchus*, and agreed in every respect with my female specimen. Dr. Sharpe compared his bird with *L. damarensis*, Shelley, but the character he gives, viz.: the gray of the crown coming down almost to the base of the bill, is one belonging to *L. erythrorhynchus*. I was quite unable to distinguish any difference between *L. medianus* and the present species, and have therefore included it among the synonyms given above.

84. *Lophoceros flavirostris*.

Buceros flavirostris. Rüpp, Faun. Abyss. Vogel, p. 6, pl. 11, fig 2 (1835).

Lophoceros flavirostris. Ogilvie-Grant, Cat. B. Brit. Mus., Vol. XVII, p. 412 (1892). Sharpe, P. Z. S., p. 499 (1895).

♂ ♂ Hullier. Bill golden yellow. Iris cream color. Throat bluish-white shading into blue, then to a light purple.

♀ Hullier. Bill golden yellow. Iris cream color. Throat black.

Like the preceding species, the present one was met with everywhere, and was even more common than its relative. The habits of these two forms did not appear to differ in any way, and the flight was very similar. These birds are one of the characteristic features of the landscape, especially noticeable even in a country which in many parts was fairly alive with feathered creatures.

FAM. UPUPIDÆ.

85. *Upupa somalensis*.

Upupa epops senegalensis. (nec Sw.); Shelley, Ibis, p. 397 (1895).

Upupa somalensis. Salv, Cat. B. Brit. Mus., Vol. XVI, p. 13, pl. 1 (1892).

♂ Hullier.

o? Haud. Iris brown.

This bird, the bearer of good news, according to native belief, was frequently seen. It was rather shy in comparison to other birds, and in its flight and general habits resembled the common Hoopoo found in Egypt, India and Europe.

86. *Irrisor erythrorhynchus*.

Promerops erythrorhynchus. Rüpp, Syst. Uebers., p. 28 (1845).

Irrisor erythrorhynchus. Salv, Cat. B. Brit. Mus., Vol. XVI, p. 19 (1892).

♀ Le Gud. Bill carmine.

♂ Hullier.

♀ ♀ ♀ ♀ Hullier. Bill orange. Iris black.

This is a gregarious species frequently met with, going in flocks of perhaps as many as a dozen. When flying from tree to tree they are usually silent, but chatter vociferously as soon as they alight. They climb about the branches seeking for food, insects chiefly I imagine, and it appears they are quite indifferent whether the head is up or down, or whether the back or belly is presented to the sky. They are very active and industrious in the tree tops, and assume singular positions at times when chattering loudly.

87. *Rhinopomastus minor*.

Promerops minor. Rüpp, Syst. Uebers, p. 28 (1845).

Rhinopomastus minor. Salv, Cat. B. Brit. Mus., Vol. XVI, p. 26 (1892).

♂ ♂ Marodijeh.

♂ Hullier.

♀ ♀ Hullier.

This handsome and graceful bird is the noisiest creature among the feathered tribes of Somali-land. The volume of sound and the variety of notes a flock can produce is something extraordinary, and makes one at times doubtful if it all comes from a bird's throat. Occasionally there is a rolling intonation almost impossible to describe, and again it will sound like a watchman's rattle. This species goes in flocks of from six to a dozen individuals, and the noise they can make when they set

themselves seriously about it requires that one should hear it to fully comprehend their great ability in that line. Although it is charged with possessing an offensive odor, and has been called "Stinking Crow," I never found anything particularly objectionable about it, not more so than is noticeable among members of the genus *Corvus*, *Garrulus*, etc. This species appears to great advantage when flying, its long tail and the white spots on wing and tail feathers contrasting very agreeably with the generally dark plumage.

FAM. MEROPIDÆ.

88. *Merops albicollis*.

Merops albicollis. Vieill, Nouv. Dict. d' Hist. Nat., Vol. XIV, p. 15 (1817).

♂ Berbera. Iris scarlet.

This species was not common, indeed but few individuals were observed by us.

89. *Melittophagus cyanostictus*.

Merops cyanostictus. Oust, Bibl. Haut. Etudes, Vol. XXXI, Art. 10, p. 4 (1886).

Melittophagus cyanostictus. Sharpe, Cat. B. Brit. Mus., Vol. XVII, p. 48, pl. 1, fig. 3 (1892).

♂ Hullier. Iris red.

o? Hullier.

♂ Hersi Barri, Ogaden.

This pretty little bee-eater was frequently seen as far south as the expedition reached. Though sometimes it was observed in flocks, yet it seemed mostly to go singly or in pairs. Very swift upon the wing it was most expert in catching flying insects, often returning with its prey to the twig it had just left.

90. *Melittophagus revoilii*.

Merops (melittophagus) revoilii, Oust. in Revoil's Faun. et Flor. Comalis, Ois., p. 5. pl. 1 (1886). Sharpe, Cat. B. Brit. Mus., Vol. XVII, p. 54 (1892).

♂ ♂ Hullier.

♀ Haud.

Not common, and not met with before reaching the plateau south of the Golis range.

FAM. COLIIDÆ.

91. *Colius macrurus*.

Lanius macrurus, Linn. Syst. Nat. Vol. I, p. 134 (1766).

Colius macrurus. Sharpe, Cat. B. Brit. Mus. Vol. XVII, p. 345 (1892).

♂ Hüllier, Iris crimson. Feet, face and base of bill carmine.

This attractive little bird was frequently seen flying in flocks, pursuing rapidly a straight course, and easily recognizable by the long tails streaming behind like slender lengthened straws. They usually alighted on the very tops of trees and were almost completely hidden in the foliage. They were generally quiet when on the branches which made it additionally difficult to see them amid the leaves. Also they were rather shy and did not often permit a near approach.

FAM. CAPRIMULGIDÆ.

92. *Caprimulgus donaldsoni*.

Caprimulgus donaldsoni. Sharpe, Brit. Orn. Club, iv. p. xxix (1895). Id., Proc., Zool. Soc., p. 503 (1895).

♀ Haud.

This species seemed to be rare in the country traversed, as it was only met with two or three times. It was flushed from a thicket of thorn bushes (and only those who have tried to penetrate such places know how thick they are), where it was passing the heated day. On the occasion when the specimen brought back was secured, two rose from the ground but only one was obtained. Probably the one that escaped was a male.

93. *Caprimulgus nubicus*.

Caprimulgus nubicus. Licht. Verz. Doubl., p. 59 (1823). Hartert, Cat. B. Brit. Mus., XVI. p. 556 (1892).

♀ Haud.

o? Haud. Iris black, pupil white.

Not uncommon, and frequently flushed from the grass, or amid clumps of bushes. On such occasions the bird would only fly a short distance and alight, sometimes on the bare open ground.

ORDER STRIGES.

FAM. BUBONIDÆ.

94. *Scops capensis*.

Scops capensis. Smith, S. Afr. Quart. Journ., 2d Ser., No. 4, pl. 1, p. 314. Sharpe, Cat. B. Brit. Mus., Vol. II, p. 52 (1875).

♂ Daboije. Iris golden yellow. Feet gray.

♀ Daboije. Iris golden yellow. Feet gray.

We only met with this species once at our second camp on the return journey north of Silo Plain. The pair flew into a tree near where the tents were being pitched, and were secured by Mr. Dodson.

ORDER ACCIPITRES.

FAM. FALCONIDÆ.

95. *Astur sphenurus*.

Falco sphenurus. Rüpp. Neue. Wirb., p. 42 (1835). Sharpe, Cat. B. Brit. Mus., Vol. I, p. 112 (1874).

♂ juv. Hullier. Eyelids, cere, iris, and legs yellow.

A young male of this small hawk, the only one procured.

96. *Melierax poliopterus*.

Melierax poliopterus. Cab., in Decken's Reis., Vol. III, Vög., p. 40 (1869). Sharpe, Cat. B. Brit. Mus., Vol. I, p. 88 (1871).

♂ Laferug. Cere yellow. Iris reddish brown. Legs orange.

We saw this bird only occasionally. It was the single species among rapacious bird, that I had ever heard singing. Its voice is musical, and the specimen obtained was perched on a branch near the path we were traveling and attracted my attention by the low song it was, I might almost say, warbling. It was a curious accomplishment for a hawk to possess, and seemed out of place, considering the character of the race to which the performer belonged.

97. *Aquila rapax*.

Falco rapax. Temm., Plan. Col., Vol. I, pl. 455 (1828).

Aquila rapax. Sharpe, Cat. B. Brit. Mus., Vol. I, p. 242 (1874). Id., Proc. Zool. Soc., p. 507 (1895).

♀ Derogodleh. Iris gray. Cere and feet yellow.

This fine eagle was very common, and quite tame, coming about the camp, often alighting close to the zareba and feeding upon any scraps of meat thrown away. It did not seem to be at all particular about the quality or state of its food, and would often drive the vultures away from a mess which it would be extreme courtesy to call anything else save carrion. It must be regarded in the light of a useful scavenger, and I doubt if it ever attempts to kill anything itself.

98. *Helotarsus ecaudatus*.

Falco ecaudatus. Daud, *Traité*, Vol. II, p. 54 (1800).

Helotarsus ecaudatus. Sharpe, *Cat. B. Brit. Mus.*, Vol. I, p. 300 (1874). *Id.*, *Proc. Zool. Soc.*, p. 508 (1895).

♂ Haili. Cere yellow. Bill and legs rich orange.

This splendid eagle was often seen flying high in air, scrutinizing the ground below. It presents a singular, though beautiful appearance on the wing, the extremely short tail and long primaries giving it the shape not unlike that of a large bat. The underside of the wings being white, they seem almost transparent, as the sun shines upon them, and they afford a strong contrast to the black body. When in the air, the bird sails or soars, the wings being flapped rarely, but held motionless, stretched out to their fullest extent. It is altogether the finest eagle in Somali-land. North of the Golis range it is not often seen. The specimen obtained was shot with a rifle by Mr. Akeley.

99. *Poliohierax semitorquatus*.

Falco semitorquatus. Smith, *Rep. Exp. Centr. Afr.*, p. 44 (1836).

Poliohierax semitorquatus. Sharpe, *Cat. B. Brit. Mus.* Vol. I, p. 370 (1874). *Id.*, *Proc. Zool. Soc.*, p. 510 (1895).

♂ Adadleh.

♂ Silo Plain.

♀ Adadleh. Iris brown. Cere, eyelids and legs, vermilion.

♀ ♀ Hullier. Iris brown. Cere, eyelids and legs, salmon color.

♀ ♀ Higlileh, Ogaden.

The most beautiful little hawk in the country, and one not at all uncommon, though the females appeared to far outnumber the males.

100. *Cerchneis fieldi*, sp. nov.

♂ Silo Plain.

♀ Toyo Plain.

This apparently very distinct species of Kestrel was seen at various times and places, mostly in the open country, seeming to prefer such localities as the plains, where the two examples brought with me were procured. It is nearest to *C. ruficoloides*, Smith, from South Africa, but differs in being much lighter in color generally, the dark bands on the upper surface much narrower, and has seven bars on the tail instead of six. At first

sight this bird seemed to answer the description of *Tinnunculus arthuri*, Gurney, the unique type of which is in the Norwich Museum, but on sending the specimens to J. H. Gurney to have them compared with the types, he replied that they were "larger than *T. arthuri*, a good deal more rufous on the breast and belly, and had not the conspicuously barred sides and flanks, which are the chief characteristics of the bird in the Norwich Museum." The species may be described as follows:

Male. Upper parts light rufous, the head and nape streaked with narrow black lines; back and wings barred narrowly with black. Rump barred like the back, and upper tail coverts ash-gray, barred with black and tipped, with light rufous. Primaries black edged with light buff. Under-wing coverts buff with a few short narrow black lines. Throat buffy white; rest of under parts light rufous or rich buff, darkest on breast, narrowly streaked with black on breast, abdomen, flanks and thighs. Crissum and under tail coverts pale buff, immaculate. Tail ash-gray with seven bars of black, the subterminal on all but the outermost being in width nearly one-fifth the length of the feathers and tipped narrowly on the central pair with rufous, broadly on the others with buffy white. The outermost feather is buffy white barred with black. The tail therefore is darkest in the center, growing lighter towards the outer feather. Bill pale blue. Legs and feet yellow. Total length of skin 12.50 inches. Wing, 9.40. Tail, 6.20. Culmen, along curve, .77. Tarsus, 1.50.

Female. Resembles the male and is about the same size, but has the upper part of the flanks narrowly barred with black, in this respect leaning towards the characteristic markings of *T. arthuri*.

It gives me pleasure to call this species after Marshall Field, Esq., whose name this institution bears, and who is its most liberal patron.

FAM. VULTURIDÆ.

101. *Lophogyps occipitalis*.

Vultur occipitalis. Burch, Trav., Vol. II, p. 329 (1824). Sharpe, Cat. B. Brit. Mus., Vol. I, p. 15 (1874).

♂ Mandera.

This fine vulture was not uncommon, coming about the camp in considerable numbers, most of the individuals however, were birds in immature plumage, those with white heads, thighs and

lower parts being comparatively few. On the wing it moved majestically and a flock of these birds soaring high in air was a beautiful sight.

FAM. GYPOGERANIDÆ.

102. *Serpentarius secretarius*.

Vultur secretarius. Shaw, Cim. Phys. pl. 28 (1796).

Serpentarius secretarius. Sharpe, Cat. B. Brit. Mus., Vol. I, p. 45 (1874).

♂ Silo Plain.

One specimen seen and obtained at Silo on the return journey. It was very wary and was killed by Mr. Akeley with a rifle ball at a distance of about five hundred yards.

FAM. OTIDIDÆ.

103. *Lophotis gindiana*.

Eupodotis gindiana. Oust. Bull. Soc. Philom., p. 163 (1881).
Sharpe, Cat. B. Brit. Mus., Vol. XXIII, p. 292 (1894).

♂ ♂ Laferug. Iris yellow.

♀ Haili.

This small bustard was frequently met with, and seemed particularly plentiful in the country south of Toyo Plain. It was generally found in pairs, though often singly, and would flush close to us as we walked or rode. Its flight was very much like that of a duck, and it had a peculiar cry of various syllables, each one uttered in a higher key than the last, ending in a lengthened one that was almost a screech. The flesh of this bird is fairly good, but all feathered creatures in the country save weaver birds, for reasons best known to themselves are tough, and not much of an addition to the larder.

104. *Lissotis hartlaubi*.

Otis hartlaubi. Heugl. Journ. f. Ornith., p. 1 (1863). Sharpe, Cat. B. Brit. Mus., Vol. XXIII, p. 307 (1894).

♂ Silo Plain. Iris brownish yellow, eyelids yellow. Bill and legs, cream color.

Only two specimens of this fine bustard were seen, and these were met with on Silo Plain on the return journey. They were very shy and skulked about in the grass with the head carried low down in the manner of rails. Mr. Dodson tried several days to get within shooting distance of the birds, but ineffectually, and I

then suggested that Mr. Akeley should lie down some distance ahead on the plain, and Dodson should flush the birds, which in their flight might go near enough to the one in ambush for a shot. The ruse was successful and the specimen obtained was brought down at long range. It is a very handsome bird, and never before, I believe, procured in Somali-land.

105. *Trachelotis canicollis*.

Otis canicollis. Reichen. Orn. Centralbl., p. 79 (1881).
Sharpe, Cat. B. Brit. Mus., Vol. XXIII, p. 309 (1894).

♂ Shilmaleh, near Toyo Plain. Iris brown, legs white.

♀ Shilmaleh, near Toyo Plain.

This, the third species of bustard procured, was obtained at a mid-day camp north of Toyo on our return to Adadleh. The pair were together and flushed amid some trees and bushes near where we stopped for lunch. A few more were seen in other places, but it seemed to be a rather rare species in the country.

Two other species of bustards were seen by us but not obtained, the Great Bustard, *O. tarda*, and the Lesser Bustard, probably *T. tetrax*, but I never could get near enough to it to be sure that it was correctly identified.

ORDER LIMICOLÆ.

FAM. ÆDICNEMIDÆ.

106. *Ædicnemus affinis*.

Ædicnemus affinis. Rüpp. Mus. Senck., Vol. II, p. 210 (1837).
Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 17 (1896).

♀ near Berbera.

Occasionally met with at various points on our journey, but nowhere common.

FAM. CURSORIIDÆ.

107. *Dromas ardeola*.

Dromas ardeola. Paykull K. Vet. Akad. Handl. Stockh. XXVI, pp. 182, 188, Tab. 8 (1805).

Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 28 (1896).

♂ Berbera.

Shot out of a flock on the seashore, and the only time the species was seen.

108. *Cursorius somalensis*.

Cursorius gallicus somalensis. Shelley, Ibis, p. 415 (1885).

Cursorius somalensis. Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 37.

♂ Dagahbur, Ogaden. Iris brown. Legs white.

♀ juv. Daboyeh, Ogaden.

Very rare and only seen two or three times.

The young bird is light buff generally, almost white on abdomen and lower tail coverts. Feathers of top of head have terminal black spots. Back and wings barred with blackish-brown. Throat whitish. Tail buff barred with brownish-black. Slight superciliary stripe, buff.

109. *Rhinoptilus hartingi*.

Rhinoptilus hartingi. Sharpe, Bull. Orn. Club, No. 111, p. xiv (1893). Id. Cat., B. Brit. Mus., Vol. XXIV, p. 46 (1896).

♀ ♀ Toyo Plain.

♀ Silo Plain.

Not uncommon in open localities, generally going in pairs.

110. *Rhinoptilus cinctus*.

Cursorius cinctus. Heugl., Syst. Uebers, p. 54 (1856). Id., Orn. N. O. Afr., Vol. III, pl. 1, p. 792 (1873). Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 46 (1896.)

♂ Haud. Iris brown, eyelids yellow. Legs creamy white.

♂ Dagahbur. Iris brown, eyelids yellow. Legs creamy white.

Always met with in pairs, usually among clumps of bushes. Very difficult to see when on the ground, as the birds remain perfectly motionless until you are almost on them, when they rise and with an awkward, ungainly flight, flap along a short distance and alight in a similar place to that from which they were disturbed. It was always a surprise to me to flush these birds, as the localities they frequented seemed so much more suitable for a member of the Rasores than one of the Limicolæ, and it was a curious sight to see these long-winged birds flopping up from places many miles removed from any water.

FAM. CHARADRIIDÆ.

111. *Stephanibyx coronatus*.

Charadrius coronatus. Bodd. Tab. Pl. Enl., p. 49 (1783). Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 178 (1896).

♂ ♂ Hullier. Legs and bill coral pink.

♀ Hullier.

This was one of the most familiar species met with. It appeared to be generally distributed about the country, and was always drawing attention to itself by incessantly screaming when on the wing. On the ground, they usually were silent, running a short distance and then standing motionless regarding the intruder on their domains. The instant however they took wing, they began to utter their shrill cry, and never ceased their clatter until they again alighted. They were heard during the day, and also at all times of the night, vociferating their displeasure at anything, whether man or beast, that disturbed them in their avocations.

112. *Oxyechus tricollaris*.

Charadrius tricollaris. Vieill. Nouv. Dict. d'Hist. Nat., Vol. XXVII, p. 147 (1818). Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 247 (1896).

♀ ♀ Las Durban. Iris light brown, eyelids vermilion. Legs yellow ochre.

Only met with on the seashore near Berbera.

113. *Terekia cinerea*.

Scolopax cinerea. Gldenst. Nov. Comm. Petrop., Vol. XIX, p. 473, pl. 19 (1774). Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 474 (1896).

♂ ♂ ♂ Berbera.

Killed out of a flock upon the beach near Berbera.

114. *Limonites minuta*.

Tringa minuta. Leisl in Bechst. Natuurg. Deutschl. Nachtr. Vol. I, p. 74 (1812).

Limonites minuta. Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 538 (1896).

♂ ♂ Berbera.

Obtained on the beach at Berbera.

115. *Pelidna alpina*.

Tringa alpina. Linn. Syst. Nat., Vol. I, p. 249 (1766).

Pelidna alpina. Sharpe, Cat. B. Brit. Mus., Vol. XXIV, p. 602 (1896).

♂ Berbera.

On the beach at Berbera.

ORDER LONGIPENNES.

FAM. LARIDÆ.

116. *Larus hemprichi*.

Adelarus hemprichi. Bruch, Jour. f. Orn., p. 106 (1853).

Larus hemprichi. Saund, Proc. Zool. Soc., p. 193 (1878).

♂ Berbera.

Common along the coast.

ORDER COLUMBIFORMES.

FAM. PERISTERIDÆ.

117. *Turtur lugens*.

Columba lugens. Rüpp. Neue. Wirbelth, p. 64, t. 22, f. 2 (1835-40).

Turtur lugens. Salv., Cat. B. Brit. Mus., Vol. XXI, p. 408 (1893).

♂ Marodijeh.

♂ Hullier.

♀ Marodijeh.

Met with along the northern border of the Haud, but not plentiful.

118. *Turtur senegalensis*.

Columba senegalensis. Linn. Syst. Nat., Vol. I, p. 283, No. 26 (1766).

Turtur senegalensis. Salv., Cat. B. Brit. Mus., Vol. XXI, p. 448 (1893).

♂ Hullier. Iris gray. Legs carmine.

♀ Laferug.

A not uncommon species.

119. *Turtur roseogriseus*.

Columba roseogriseus. Sund. Krit. Om. Levaill., p. 44 (1857).

• Salv., Cat. B. Brit. Mus., Vol. XI, p. 429 (1893).

♂ Hullier.

Very common, found everywhere we traveled, sometimes in very large flocks. I have seen these birds in the early morning about sunrise congregate in great numbers upon the trees, as if holding a council on some important matters. At all times of the day this species would be in sight, and it was constantly passing in rapid flight, always moving in a straight course, taking the

most direct route from one point to another. Several times we had these and other species of dove served at table, but usually found them rather tough and without flavor. Sometimes even stewing would not make them tender.

120. *Turtur damarensis*.

Turtur damarensis. Finsch & Hartl, Vög. Ost Afr., p. 550 (1870). Salv., Cat. B. Birds, Brit. Mus., Vol. XXI, p. 426 (1893). o? Le Gud.

Like the previous species, which it closely resembles, the present one was always plentiful. When flying, or even when on the trees, it was difficult, if not impossible, to distinguish the one from the other, and the species could be identified only when in the hand. It goes in flocks, and individuals are constantly seen speeding through the air.

121. *Æna capensis*.

Columba capensis. Linn., Syst. Nat., Vol. I, p. 286, No. 39 (1766).

Æna capensis. Salv., Cat. B. Brit. Mus., Vol. XXI, p. 501 (1893).

♀ ♀ Dagahbur. Iris brown. Legs purple.

This graceful little dove was quite common, and was always an attractive object, hurling itself along with almost the speed of a bullet, the long tail adding grace to the trim form, as like a meteor it flashed by.

122. *Chalcopelia afra*.

Columba afra. Linn, Syst. Nat., Vol. I, p. 284, No. 31 (1766).

Chalcopelia afra. Salv., Cat. B. Brit. Mus., Vol. XXI, p. 506 (1893).

♂ Le Gud. Iris brown. Legs and bill purple.

ORDER PTEROCLETES.

FAM. PTEROCLIDÆ.

123. *Pteroclorus exustus*.

Pterocles exustus. Temm. Pl. Col. Vol. V, pls. 28, 29 (1815).

Pteroclorus exustus. Ogilvie-Grant, Cat. B. Brit. Mus., Vol. XXII, p. 12 (1893).

♂ ♂ Berbera.

♀ Deregodleh.

Seen occasionally in small flocks coming to and going from water in the morning and evenings. Numbers were in the habit of visiting a small ditch on the beach at Berbera, which received the overflow of water from a large cistern, and specimens could be obtained there without difficulty as they flew in to drink.

FAM. TETRAONIDÆ.

124. *Francolinus granti*.

Francolinus granti. Hartl, Proc. Zool. Soc., p. 665, pl. 39, fig. 1 (1865). Ogilvie-Grant, Cat. B. Brit. Mus., Vol. XXII, p. 148 (1893).

♂ Le Gud.

♂ Hullier.

Grant's Francolin is a very noisy bird, and its chattering note is frequently heard throughout the day, but especially in the early mornings and evenings. It is a shy bird and, keeps as much as possible out of sight of any one intruding upon its retreats, retiring among the thickest shrubbery it can find, and trusting more upon its legs than wings as a means of escape. It is difficult to flush, except when surprised in open ground. The flesh is not especially tender or well flavored, even to a hunter's appetite, and we generally hung the birds in the shade for a day or so before cooking. It appeared to be a plentiful species, especially as we penetrated into the country, though at no time did we meet any large flock, six or eight individuals being about the maximum number.

125. *Pternistes infuscatus*.

Pternistes infuscatus. Cat. Jour. f. Orn., p. 413 (1868).^{*} Ogilvie-Grant, Cat. B. Brit. Mus., Vol. XXII, p. 182 (1893).

♂ Haili. Bare skin of face and throat Indian red, abruptly changing to yellow on neck. Iris brown.

♂ Le Gud.

♀ Le Gud.

We met with this species about everywhere we traveled. It was tame and unsuspicious, and would feed about camp, and did not seem to mind remaining in the open away from any thick cover. It, like the preceding, is a noisy species, and its loud notes were constantly heard. When flushed it would rise with the whirl, characteristic of gallinaceous birds, and go away in a straight course, and its large size and steady flight made it an

easy mark. The coloring of the bare skin on face and throat, extending even upon the upper neck, in life is very bright and beautiful. In the dry skin this disappears into a uniform dull yellow, and gives no idea of the gradation of the beautiful red of the upper portion into the clear lemon-yellow of the lower. When walking this bird carries its tail rather low, and has an arched back, making an outline similar to that of a guinea fowl. We did not find the flesh of this species any better than that of other birds we tried, in fact, in the majority of cases it was most decidedly tough and flavorless. It is a handsome creature though, and I always took much pleasure in watching the birds as they wandered about the camp. We shot but few, for it would have been wasteful slaughter to kill them, as we did not care much for them as an article of food, and had not the facilities for carrying away skins for specimens.

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CATALOGUE OF A COLLECTION OF BIRDS FROM GUATEMALA

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CHICAGO, U. S. A.

November, 1907.

CATALOGUE OF A COLLECTION OF BIRDS FROM GUATEMALA

BY NED DEARBORN

The collection of birds treated in this paper was derived from three sources. Messrs. Edmund Heller and Charles M. Barber, who spent the winter of 1904-5 in Guatemala making general collections for the Department of Zoology, supplied 49; Mr. Barber, who continued the general collecting the following year, furnished 138; and the writer, making birds his chief object, collected 1,000 during the early part of the year 1906. The total number, then, is 1,187, comprising 305 species and subspecies, mostly skins, though several skeletons and alcoholic specimens are included. All localities represented by specimens are indicated on the accompanying map, which also shows the route followed by the writer.

This route, for the most part, was the line of least resistance. From Puerto Barrios, the port of entry, to El Rancho, the Guatemala Northern R. R. furnished convenient transportation; and from Guatemala City to Mazatenango and San José, by way of Esquintla, the Guatemala Central R. R. was employed. Between El Rancho and Guatemala City, and from Patulul to Tecpam and back to Guatemala City, it was necessary to go on horseback, pack horses or Indians being employed to carry luggage, according to which happened to be the more convenient. As a rule, however, an Indian *mozo* is preferable to a horse as a carrier for packages of 100 pounds or less.

The localities visited and the days spent in collecting at each, are as follows: El Rancho, January 4th to 11th; Los Amates, January 15th to February 9th; Puerto Barrios, February 12th; Gualan, February 14th to 17th; Lake Amatitlan, February 24th to 27th; San José, March 5th to 9th; Mazatenango, March 15th to 21st; Patulul, March 23d to April 5th; Lake Atitlan, April 7th to 10th; Tecpam, April 11th to 15th. The physical aspects of these places, and the conditions encountered at each of them, have such a bearing on the collection that a prefatory word concerning them is not impertinent.

El Rancho, the first stopping place, has an elevation of about 1,000 feet. Its dry season is long, and the rainy season is somewhat uncertain. In January the earth presents a baked appearance.

Cacti are common, and away from the river very few trees have foliage. By ascending the mountains to the north of the town, green trees and brooks of cool water may be found, but these all disappear long before reaching the valley. Perhaps the most striking object in the landscape of the valley is the tree cactus (*Cereus*), which is the especial home of the Santa Cruz woodpecker (*C. sancta-cruzi*) and the cactus wren (*H. capistratus*). Its fruit is much sought by orioles and the long-tailed jays. Birds were fairly abundant. In addition to the species secured here, may be mentioned the mangrove swallow (*I. albilinea*) and the killdeer (*O. vociferus*), neither of which is represented in the collection.

Los Amates, elevation about 60 feet, is in the rubber country. The village is on the bank of the Motagua River, and the region immediately surrounding it is densely covered with a great variety of vegetation. It is practically useless to attempt to collect away from the railroad or a path of some sort. Two weeks were spent at Finca Chapulco, a rubber plantation, three or four miles from the village. Mr. William McFarlane, manager of this estate, is not only a good host but a most agreeable companion, and the stay there was pleasant as well as profitable,—notwithstanding the rain which fell twelve out of the fourteen days. This region, away from the river, offers occasional ridges covered with pine (*P. caribæa*), and also open savannas bearing a coarse grass as high as one's head. Many species of birds occur, but few of them are abundant, and the rank nature of the vegetation makes collecting rather slow.

Puerto Barrios was visited in February for the purpose of sending specimens to Chicago. The steamer was a day late, and an attempt was made to do some collecting. The place is a swamp, the only way out being over the railway. Birds were scarce and well nigh impossible to obtain.

Gualan is at the head of canoe navigation on the Motagua River, and just within the limits of the semi-arid area which extends up the Motagua Valley far beyond El Rancho. Its altitude is about 250 feet. Its proximity to the swamp country makes it a particularly good collecting ground, inasmuch as both lowland and upland species are to be found, and in winter there are comparatively few obstructions to travel in any direction. The way from El Rancho to Guatemala City is mountainous, and until the Pacific side of the divide was reached, perhaps 20 miles northeast of the city, very few birds were seen.

The collecting at Lake Amatitlan was in the neighborhood of

the narrow part of the lake, where the railroad crosses it. The altitude is about 4,000 feet. The depth of the lake is about 100 feet, deep water extending to within a few feet of the shore. A number of hot springs are located along the southern margin. Excepting where erosion has cut down the side of a mountain and filled a portion of the lake, the strip of shore is narrow,—in places there are sheer ascents from the water. Green vegetation was confined to the lake shore, and practically all bird life was near the water. A number of species not encountered on the Atlantic slope were collected here. The jay (*C. melanocyanea*) and the sparrow (*M. biarcuatum*) were the two most striking species, both being new and abundant.

San José was the next locality visited. The heat here was so great that it was found necessary to retreat to the highlands to recuperate, at the end of five days. It is a good collecting ground, however. The lagoons teem with wading birds, and in the woods were found a number of forms not taken elsewhere. Near the beach were found a number of species peculiar to mangrove swamps, while the woods farther inland were well tenanted with birds, and not too hard to get through.

Mazatenango and Patulul are similarly situated, their altitude being about 1,800 feet. This region is watered by numerous streams from the Cordilleras and is largely under cultivation, sugar and coffee being the staple products. The forests contain some of the finest trees that were seen anywhere, and where the underbrush has been removed for planting coffee, finer conditions for collecting can scarcely be imagined. The writer joined Mr. Barber at Patulul and continued in his good company till the work was ended at Tecpam. We were especially fortunate at Patulul in not only being granted the privilege of hunting on property of the land holders, but furthermore, in being entertained by them. Sr. Don Guillermo Peitzener, proprietor of Finca San Julián, a sugar plantation, accorded us full home privileges, with every convenience amply provided. Birds were plentiful, and the collection grew rapidly there in such species as inhabit cultivated land. When we wished to work the woodland forms, we were given an equally cordial welcome at the coffee plantation known as Finca San Fernando, by its owner, Sr. Don Frederico Müller-Winter and his gracious and accomplished wife. When we came to this place after a ride on horseback over a narrow trail for several miles through the forest, we named it Paradise, and still hold that it is a credit to the name. Here is a home so remote from commercial hurry, that nervous wrack is unthinkable. A mountain,

with its base at the very door, on the one hand, a stream of water on the other, a closer environment of useful and ornamental trees and herbs, seclusion, books, a piano, a table well supplied from two continents,—finding all this at San Fernando, and enjoying it, we voted down the "Swiss Family Robinson" and set up a real ideal.

The north shore of Lake Atitlan, near Panajachel, which was our next stopping place, is too precipitous to follow, except where two small streams have worn out short valleys and made a little alluvial soil. Bird life was confined almost entirely to these valleys and the lake, which is about 5,000 feet above the sea, and has a depth of about 1,000 feet. Here we first saw the mockingbird (*M. g. guatemalensis*), the whippoorwill (*A. chiapensis*), the grebe (*C. d. brachypterus*) and the fine, large humming-bird (*C. rufus*). We took two days for the journey from the lake to Tecpam, in order that we might collect some things that we had been unable to obtain previously. Several miles of this road follow a *barranca* having a stream at the bottom, and its sides well wooded with oak and pine. In this place we secured the ant-eating woodpecker (*M. formicivorous*), the black-eared bushtit (*P. melanotis*) and the swift (*S. zonaris*). The altitude of this gorge is about 6,500 feet.

The region about Tecpam presents a striking contrast, in both fauna and flora, to the lowlands. In the vicinity of the town the land is mainly under cultivation, but towards the northwest, only a few miles away, rises Sierra Santa Elena to the height of about 10,000 feet, covered with forest to its summit. The altitude of the town is about 7,500 feet. As one ascends the mountain he finds the long-leaved pine to be the common tree between 8,000 and 9,000 feet, but above the latter elevation cypress trees exclude all other varieties. We passed a night and a day as guests of Sr. Don Guillermino Thom, who lives on the mountain at about 9,500 feet, and is the only practical forester in the republic. Here, again, we found a real home, having all the comforts desired by refined people, in the heart of a cypress forest five days' journey by ox-team from the source of supplies, Guatemala City. Here we found the junco (*J. alticola*), the kinglet (*R. s. clarus*), the green toucan (*A. prasinus*), the thrush (*C. f. alticola*), the red warbler (*E. versicolor*) and other species not seen elsewhere. The cypress woods are quite impenetrable without an ax. Fallen trees, thick bushes and long dripping moss make it almost impossible to move out of the cleared paths. A longer stay at Tecpam would have been profitable, but three days were all that could be spared for it.

Thanks are due, and are hereby heartily rendered, to Mr. F. G. Williamson, General Manager of the Guatemala Northern R. R., and Col. W. P. Tisdell, Assistant Manager of the Guatemala Central R. R., for assistance in transportation; to Consul General Winslow and Vice Consul Owen, both of whom did all in their power to give assistance, which on at least one occasion was sorely needed; and to Mr. William Mac Farlane, Sr. Don Guillermo Peitzener, Sr. Don Frederico Müller-Winter and Sr. Don Guillermo Thom for hunting privileges and hospitality.

It is also a pleasure to acknowledge the kindness of Dr. J. A. Allen, of the American Museum of Natural History of New York, Prof. Robert Ridgway, of the Smithsonian Institution, and Dr. C. Hart Merriam, Chief of the Biological Survey at Washington, in allowing specimens to be sent from the collections in their charge to aid in the study of this collection; and to Mr. E. W. Nelson, Chief Field Naturalist of the Biological Survey, whose knowledge of the birds of Mexico is unequaled, for advice on several doubtful points.

In the following notes, particular attention has been given to dates of capture of such specimens as were migrants from North America, and to all cases of moulting. There are few data published relating to the time when such birds as have a distinctive nuptial plumage acquire it. It may be here remarked, that the resident birds were very rarely found to show any signs of a spring moult, while the migrants taken in April and the latter part of March, as a rule were putting out new feathers. Cases of individual variation have been mentioned, and, while the naturalist bent on collecting, finds scant time to study habits, such as were apparent have been recorded. Colors are designated, as far as possible, according to Ridgway's Nomenclature of Colors.

Family Podicipedidae.

1. *Colymbus dominicus brachypterus* Chapman.

Seven specimens were taken at Lake Atitlan between March 4th and April 9th. Only one of them, a female, was in nuptial plumage. Two other females, which were assuming the breeding dress, had the chin white and the throat black; showing that the progress of moult on this area is *towards* the bill. One of the males had shed all the primaries of both wings, the pins for the new primaries being about

5 mm. in length. None of the other specimens show any lack of primaries. These little grebes were found in company with *C. n. californicus* and rarely strayed from a patch of floating vegetation. Iris yellow near the pupil, changing to orange at the periphery.

2. *Colymbus nigricollis californicus* (Heermann).

Three were collected at Lake Amatitlan and five at Lake Atitlan. They were common at the latter lake March 20th. Those taken at Lake Amatitlan (Feb. 24) were all in winter plumage. A male taken by Mr. Barber at Lake Atitlan (Feb. 23) has the throat black, only the cheeks and chin remaining white, yet no sign of the ochraceous postocular tufts is visible. The lesser wing coverts of this specimen are tinged with light bay, and another male taken a day earlier had this color on all the upper wing coverts, the majority of the lesser coverts being entirely bay, while the greater coverts were only spotted with it at the tip. Bay wing coverts are evidently an individual variation of rather uncommon occurrence. A male and a female taken the 20th and 15th of March respectively, are nearly in full plumage, the former having a sprinkling of dark bay across the lower part of the foreneck, not found on any other specimen. Iris flame-scarlet near pupil, fading outwardly to white.

Family **Pelecanidae.**

3. *Pelecanus californicus* Ridgway.

A single specimen was secured from a small flock that daily appeared along the beach at San José. This was an immature female.

Family **Anatidae.**

4. *Querquedula discors* (Linnaeus).

A single female was taken by Mr. Barber (Feb. 23d) at Lake Atitlan. None were found on Lake Amatitlan the last week in February. The deep waters of these lakes may not afford good feeding grounds for them. At all events they were scarce.

Family **Ardeidae.****5. *Heterocnus cabanisi* Heine.**

One of these bitterns was shot beside a brook in a growth of heavy timber near Los Amates. Another was flushed from a wet place out in an open savanna where grass grew high as one's head. Iris yellow; throat yellow; ocular and loreal area, greenish yellow.

6. *Cochlearis zeledoni* (Ridgway).

Two birds of this species were discovered in a large, densely foliaged tree standing on the bank of the Motagua river at Gualan. One of them was secured; no others were seen. The land in this vicinity is high and rolling and offers no other feeding place for herons than the shores of the river, which are rather abrupt.

7. *Butorides virescens* (Linnæus).

This species was found generally distributed, but nowhere abundant. One specimen was procured at Los Amates and another at Lake Atitlan.

Family **Rallidae.****8. *Porzana carolina* (Linnæus).**

Three of this species were taken at Lake Atitlan between February 23d and March 9th, and one at Lake Amatitlan February 6th. All had black throats, only one having this color intermixed with gray. A narrow fringe of rushes along the shores of these lakes is all the shelter rails can find, and it is not surprising that they appear to winter there in small numbers.

9. *Gallinula galeata* (Lichtenstein).

The only specimen of this gallinule, that was seen, was taken at Lake Amatitlan February 26th. It was in a patch of rushes on the shore of the lake near a thermal spring where the water is always quite warm.

10. *Fulica americana* (Gmelin).

Hundreds of these birds throng near the shores of lakes Amatitlan and Atitlan all winter. Only three specimens were taken.

Family **Heliornithidae**.

11. **Heliornis fulica** (*Boddaert*).

A single specimen, the only one seen, was obtained in a small but rather swift tributary of the Motagua river near Los Amates. It acted very much like a grebe, diving and trying to make its escape under water, though it did not stay down long at a time. Its stomach contained aquatic insects. Iris deep brown.

Family **Scolopacidae**.

12. **Actitis macularias** (*Linnæus*).

Two specimens were secured at Lake Atitlan, one on February 27th, the other April 8th. The latter had the outer primary of each wing about half grown; the other remiges are full-grown and unabraded. Along the flanks of this specimen are a few spotted feathers, not yet fully developed, otherwise the under parts are in winter condition — unspotted. Excepting the nape, the upper parts are freshly moulted. The February specimen has worn plumage throughout. This species was also seen at El Rancho and Lake Amatitlan, but was not common anywhere.

13. **Helodromus solitarius** (*Wilson*).

One specimen of this species was taken at Los Amates February 2d, but it was ruined by ants. None were seen elsewhere.

14. **Actodromus minutilla** (*Vieillot*).

A pair of this species was secured from a flock of forty or more at Los Amates February 2d. None were seen elsewhere.

Family **Tinamidae**.

15. **Crypturus soui meserythrus** *Sclater*.

Three specimens were obtained near Los Amates, where they appear to be common. They are difficult to see as they live in the dense forests and will not stir until one is about to step on them.

An egg, said by the natives to belong to this species, was brought in some time in April. Iris light olive.

Family Tetraonidae.

16. *Cyrtonyx ocellatus* Gould.

This handsome quail was first seen on the road from Lake Atitlan to Tecpam at an altitude of about 7,000 feet. They frequent corn-fields and, in that brushy, mountainous country, there is not much use in hunting them anywhere else. Two specimens, purchased by Mr. Barber from an Indian, who had them alive, were all that could be obtained. These were taken near Tecpam at an altitude of about 7,600 feet. Iris clove-brown.

Family Cracidae.

17. *Crax globicera* Linneus.

Curasows are not uncommon in the bottom lands about Los Amates, but one must learn their habits if he would collect them successfully. In February they appeared regularly each afternoon in some tall trees which at that season were clad only in yellow foliage. When wandering about in the jungle, it is only by good luck that one finds them. Four specimens, three males and a female, were taken, all adult. The irides of two of the males were dark red, while those of the female and the other male, which, judging by the small size of the excrescence at the base of its bill, was somewhat younger than the other two, were seal brown.

18. *Penelope purpurascens* Wagler.

The habitat of this species, like that of the curasow, is in the dense swamps, where it feeds on fruits of trees. It flies with vigor, and seems quite at home among the branches. All told, seven specimens were taken, all adults. In hunting them, a dog to flush them when they were on the ground, and send them into the trees, was found useful. When thus disturbed they were easy to discover, and not difficult to approach within gunshot. The naked ocular and loreal space in life is bright blue, the throat is red, the iris dark wine-color, and the legs carmine.

19. *Ortalis vetula plumbeiceps* Gray.

This chachalaca, or chacha as it is called by the natives of Guatemala, was found to be rather common in the lowlands, and adjacent portions of the upland country. They were noted at Gualan, which is well above the swamps though not remote from them, but not at El Rancho. Shortly after sunrise and at intervals during the day, they utter their resounding cries, of which the word *cha-cha-la-ca* is perhaps as good an imitation as can be put into printed syllables. When these vocal evolutions are in progress it is difficult to decide how many birds are calling, or where they are located, except as to general direction. Judging from their cries they are occasionally on or near the ground, but all that were seen were in trees. During the day they remain in heavy timber, but morning and evening they come to the edges of the clearings and to the cane brakes along the streams. Three examples were secured at Los Amates. These had the throat flesh color, the bill and feet horn-blue and the irides dark brown.

20. *Ortalis leucogastra* (Gould).

The white-bellied chachalaca was found only at San José. Here it was tolerably common, but at neither Patulul nor Mazatenango was it seen or heard. This bird was seen to take rather long flights high above the timber. It flies with neck straight and crest raised, which, with its long tail, give it an unusual contour. Its flight is direct and steady, and of moderate speed. The colors of iris and other soft parts are like those of *plumbeiceps*.

Family **Columbidae.**

21. *Columba flavirostris* Wagler.

A single specimen of this pigeon, taken at San José, was the only one recognized anywhere in the country. Iris orange; eyelids and base of bill red; tip of bill white.

22. *Columba rufina* Temminck and Knip.

The only pigeons of this species, that were found, were two taken at Los Amates, January 27th. Pigeons were numerous in that region, but the thick vegetation usually made it impossible to distinguish one species from another in the trees. It is probable that *rufina* is common there. These specimens, both females, show considerable variation in color of the interseapulars, which may be due



BREAST AND TRACHEA OF MALE
Ortalis vetula plumbeiceps.

to a difference in age. One has this area plumbeus with a tinge of purple; the other, pale seal brown. The former is in perfect feather, the latter has new tertials and inner primaries and outer secondaries, the other remiges being faded and abraded. Iris and feet carmine; bill black.

23. *Columba fasciata* Say.

Mr. Barber took one specimen at an elevation of 8,400 feet near Tecpam. None were seen at lower altitudes.

24. *Columba nigristrois* Sclater.

Three specimens, one from Puerto Barrios and two from Los Amates, comprise the series. One of the lot, evidently immature, has rusty margins on all of its wing feathers, and scattering elsewhere. On the occiput and nape of this specimen the rusty-tipped feathers were being replaced by those of grayish Indian purple characteristic of adults. Iris pink in adults, orange in younger birds; bill black; feet purple.

25. *Zenaidura macroura* (Linnæus).

Mourning doves, by thousands, throng the country between Gualan and El Rancho, at least during the dry season, where they live about the numerous corn fields which at that season are in the harvest. One specimen was taken at El Rancho.

26. *Melopelia leucoptera* (Linnæus).

White-winged doves were found associated with the last species at El Rancho and elsewhere. Two specimens were taken, one at El Rancho, the other near Tecpam.

27. *Claravis pretiosa* (Ferrari-Perez).

This dove was seen only in the Motagua valley near Los Amates. It appeared to prefer shingly beaches along the forest streams instead of cultivated land. Five specimens were secured. Iris lake red; bill pale blue; feet flesh color.

28. *Leptotila fulviventris brachyptera* (Salvadori).

White-fronted doves were found common everywhere. Eleven specimens were taken, as follows: One from Los Amates, one from Gualan, one from Lake Amatitlan, one from Lake Atitlan, one at 8,400 feet, near Tecpam, five at Patulul and one at San José. They were usually found in trees in the forest, and appeared to subsist

mainly on fruit. The irides of the male from San José were red, those of all the others were orange; bare ocular area and legs burnt carmine; bill black.

29. *Leptotila plumbeiceps* (*Sclater and Salvin*).

One specimen was taken at Los Amates by Messrs. Heller and Barber. None were seen by the writer. Iris lemon.

30. *Scardafella inca* (*Lesson*).

Inca doves were found to be as much a part of village life in El Rancho and Gualan as English sparrows are at home. They are such graceful, dainty little birds that it is to be hoped the time will never come when the sparrows, which have neither manners nor grace, will dispossess them. One was secured at Gualan and another at El Rancho. None were noticed in the *tierra caliente* or in the mountains. The female had orange irides, while those of the male were red. Feet flesh color; bill pale at base and black at tip.

31. *Chæmepelia passerina pallescens* (*Baird*).

Four specimens were obtained, two at Gualan and two at Lake Atitlan. It is an abundant species generally distributed. Iris Chinese orange; bill burnt carmine.

32. *Chæmepelia minuta* (*Linnæus*).

A female of this species, taken near Los Amates, was the only individual known to have been seen. Iris red; bill pale horn; feet flesh color.

33. *Chæmepelia rufipennis* (*Bonaparte*).

Rufus-winged doves were found only at comparatively low altitudes. A pair was taken at Los Amates and one at San José. Iris red; bill pale horn; feet flesh color.

Family Cathartidae.

34. *Gypagus papa* (*Linnæus*).

At Los Amates six or eight king vultures came down to assist the village pack of black vultures in disposing of a cow that had died on an island in the Motagua river. Unlike the black vultures,

which constantly stood about the carcass, these patricians spent but little time feeding, and when satisfied, ascended to the tops of some trees in the vicinity. Two adult males and one immature female were secured. Generally speaking, king vultures were scarce; aside from those already mentioned, only two were seen during the entire winter. The writer has yet to see a more beautiful bird than the present species in life. Its black wings and tail, white under parts and pale rose mantle are striking enough, but its chief beauty lies in the brilliant coloring of its head and neck. A sketch in water colors, carefully made from a fresh specimen, bears the following colors, named according to Ridgway's Nomenclature of Colors: Indian yellow, lemon-yellow, poppy-red, scarlet-vermilion, flame-scarlet, flesh color, rose-purple, and Indian purple. Iris lemon-yellow.

35. *Cathartes aura* (Linnaeus).

Turkey buzzards were found at all altitudes. They frequent mountains and open country, leaving the towns to the black vultures. One specimen was taken. Iris dark brown.

36. *Catharista urubu* (Vieillot).

In the towns black vultures vie with the pigs and dogs and chickens as scavengers. They are more numerous than poultry and quite as safe from violence. They understand the ways of humanity very well, and quickly recognize signs of a coming feast. At one time, two men were seen to bring armfuls of boughs and build a temporary shelter from the sun on the dry bed of the river. The black vultures gradually began to assemble. They stood in a circular line, and saw a sheep brought down and slaughtered, and respectfully waited till the men and their mutton had departed, when they made short work of the offal. The slaughtering place of each town is their especial rendezvous. Only one specimen was taken. Iris dark brown.

Family Falconidae.

37. *Accipiter velox* (Wilson).

An immature male, taken at Lake Atitlan April 8th, was the only example of this species known to have been seen. Iris yellow.

38. *Accipiter chionogaster* Kaup.

One specimen, a male, was taken by Mr. Barber at 8,500 feet, near Tecpam. It is apparently not a common species in the regions visited. Iris tawny; legs ochre; cere and eyelid gallstone-yellow.

39. *Buteo platypterus* (Vieillot).

In a heavy forest cleared of underbrush and planted to coffee, near Patulul, this species was found to be common, but not so elsewhere. Three adult specimens and two that were immature were obtained between March 25th and April 3d.

40. *Urubitinga anthracina* (Lichtenstein).

Mexican black hawks were seen in the lowlands near both coasts and also in the interior at least up to 5,000 feet. A pair of adults was taken at San José. They were perched on a tree where they had an extended view of the beach, whence they appeared to derive their food. Iris dark brown; feet and base of bill yellow.

41. *Asturina plagiata* Schlegel.

Three specimens were taken in all, one adult and one immature at Gualan, and another, also immature, at Patulul. At the latter place, a pair was attending a nest high in an enormous tree that stood in a field. What this nest contained there were no means of finding out. The immature plumage of this species is so similar to that of *Buteo platypterus* that at first sight it is difficult to distinguish them, but the white upper tail coverts and four emarginate primaries are diagnostic characters of *plagiata*. Iris dark brown; cere and legs yellow.

42. *Rupornis ruficauda griseocauda* (Ridgway).

This was the most abundant and easily approached hawk encountered in the republic. Four were taken at Los Amates and one at San José. None were noted in the interior highlands. The habits of this hawk are like those of the *Buteos*. They sit in exposed places, where from a height they can keep close watch on the river bank, open swamp or field that happens to be the hunting ground of the particular individual. Only the outer rectrices of the San José specimen show even traces of rufus in the light bars; but this color appears on all the rectrices of the Los Amates birds. Iris, cere and feet yellow.

43. *Spizaëtus ornatus* Daudin.

The only specimen seen was taken near Patulul by Mr. Barber. This is in immature plumage, yet strikingly handsome with its white head adorned by three long occipital plumes of dusky brown, white under parts set off by heavy pectoral and axillary bars, and its long legs, feathered to the toes and barred black and white. We were told that this hawk occasionally visited the chicken yard. It was shot from the top of a high tree in the woods, where it was sitting apparently on the watch for prey. The irides of this bird were straw-color; and they exhibited a graded depth of color from lighter, next the supra-orbital process, to darker at the lower, unshaded portion. This feature has also been noticed in the eyes of other large hawks. The increased pigmentation of the lower half of the iris appears to offset the shading of the upper half by the projecting supra-orbital process, and thereby to render the illumination of the retina more nearly uniform than would otherwise be the case.

44. *Ictinia plumbea* (Gmelin).

Several were seen at Los Amates, but only one was secured. None were seen elsewhere. Iris maroon.

45. *Falco albigularis* Daudin.

One specimen was taken near Patulul and a pair at Mazatenango. At the latter place one or two others were heard in the forest. None were found away from heavy timber. They were in pairs and noisy the third week in March, and were usually found sitting on the highest dead-topped trees available. Iris dark brown.

46. *Falco sparverius* Linnæus.

Two typical males, were taken in the highlands near Tecpam.

47. *Falco sparverius phalœna* Lesson.

Desert sparrow hawks were rather common at every station, where there was much cleared land, below 2,000 feet. Only two specimens were taken, one at Los Amates and one at Gualan. Both were easily referable to this subspecies.

48. *Micrastur melanoleucus* (Vieillot).

A single example of this hawk was taken at San José. It does not appear to be a common species. Iris brown; base of bill, ocular area and feet yellow.

49. *Micrastur guerilla* Cassin.

The only specimen seen, an immature male, was killed in a dense thicket near Los Amates. The only evidence of adult plumage on this specimen consists of a band of slate-colored feathers around the lower hind neck, white chin, slaty throat and a very few scattered feathers on the chest and thighs. Salvin and Godman's description of the juvenile plumage of this species* applies very well to this specimen except as to the number of white bars on the tail; their bird had four; this one has five. The obscure white collar, seen only on immature birds, is probably a vestigial character, which in *melanoleucus* remains permanent, and in *mirandollei* has disappeared altogether. Iris light brown; maxilla black; mandible, feet and bare ocular and loreal area lemon-yellow.

50. *Herpetotheres cachinnans* (Linnæus).

This curious hawk was encountered only at Los Amates and Mazatenango. It haunted the environs of the former town, and morning and evening made the place resound with its loud calls, often keeping them up till long after dark. One was secured at Los Amates. Iris dark brown; base of bill yellow; from nostril outward, black; feet straw color.

51. *Polyborus cheriway* (Jacquin).

Several caracaras were seen at El Rancho and Gualan, and one was secured at San José.

Family Strigidae.

52. *Otus flammeolus* (Kaup).

A single specimen was obtained at Tecpam by Mr. Barber. Iris dark brown; cere gray. Stomach contained beetles.

53. *Speotyto cunicularis hypogæa* Bonaparte.

A few were seen at Gualan and El Rancho in dry gulches. One was secured at the latter place. Iris yellow; bill greenish yellow; feet yellowish green.

54. *Glaucidium brasilianum ridgwayi* Sharpe.

At El Rancho and Patulul this little owl was common. Two

*Biologia Centrali Americana, Aves, Vol. III, p. 110.

were obtained at the former place and three at the latter. No two are colored alike. The Rancho birds, which represent both color phases, are decidedly paler than those in the corresponding phases from Patulul, which difference can readily be accounted for on climatic grounds. Of the three Patulul specimens, the back of one is near Prout's brown; of another chestnut; and the third somewhere between them. Iris lemon; bill and feet straw color.

Family Psittacidae.

55. *Ara macao* (Linnæus).

This macaw is tolerably common in the *tierra caliente* of the Atlantic slope. It was seen daily about Los Amates, usually in pairs, flying high and uttering occasional squawks. They are striking looking birds, as seen on the wing against a sky background. Their lengthened contour, red color and steady flight all serve to hold the observer's eye. They fed, in January, on wild figs, and were exceedingly hard to bring down from the tops of the immense fig trees. Four specimens were obtained in all.

56. *Conurus holochlorus rubritorques* Sclater.

Four specimens were taken at Gualan, where they appeared to be fairly common. One of these shows no red feathers whatever, and only one of the others has the throat and foreneck mainly red. Iris orange; ocular area dusky.

57. *Conurus aztec* Souance.

Three specimens were taken in the lowlands about Los Amates. Iris orange; ocular area white.

58. *Conurus canicularis* (Linnæus).

Judging from the localities in which specimens of this parakeet were taken, this species prefers drier and more open country than the last. Five examples were taken; one at Gualan, two at El Rancho, one at Mazatenango and one at San José. Iris straw; ocular area yellow; bill white.

59. *Brotogerys jugularis* Müller.

Four specimens were secured at San José, where it was common and easily approached. It was not seen elsewhere. Iris straw color.

60. *Amazona autumnalis* (Linnæus).

This parrot was abundant about Los Amates, and six specimens were obtained there. It was not seen elsewhere. Iris orange; bill straw except cutting edge, which was horn color; feet horn-blue.

61. *Amazona auropalliata* (Lesson).

A pair of these parrots was seen in the woods near San José, and one of them secured. None were encountered elsewhere. The specimen taken had a patch of yellow on its forehead as well as on its nape. Iris orange.

62. *Amazona albifrons* (Sparrman).

Three white-fronted parrots were taken at Gualan and two at San José. At the former place they were abundant in February. The foreheads of the Gualan birds are clear white, while those from San José are yellowish. The climatic requirements of this species appear to agree with those of *Conurus canicularis*. Iris straw color; bill yellow; ocular area flesh color.

63. *Pionus senilis* (Spix).

Two specimens were obtained at Gualan. They were a part of a flock that was found feeding on the fruit of a large leguminous tree. This species was not noted elsewhere. Iris dark brown; bill pale green; feet dull yellow.

Family Cuculidae.

64. *Crotophaga sulcirostris* Swainson.

Grooved-billed anis are abundant in the low-country and up to 4,000 feet, above which they were not noted. They are eminently social creatures, which spend much time perching on low bushes, weeds or hedges, often several on the same branch, where they communicate in squealy metallic tones, preen their fluffed feathers and look very shabby. They are thin, loose-jointed, and sparsely feathered birds. The most attractive feature about them is their habit of attending cattle and horses, which they scan for ticks. The animals allow these birds to alight upon their backs, cling to their sides or legs, and investigate their ears, with absolute indifference. The anis do not depend altogether on ticks, however. They often

keep close to the feeding animal's nose and capture such insects as are disturbed by it. Specimens were obtained at Gualan, El Rancho, Lake Amatitlan and Patulul,—six in all. Iris Prout's brown.

65. *Tapera nævius* (Linnæus).

A single specimen, the only one seen, was taken at Gualan. This bird was discovered in a pile of brush in a pasture. Iris brown; feet horn-blue.

66. *Morococcyx erythropygus* (Lesson).

Three specimens were taken at Gualan. None were seen elsewhere. These were all found on the ground, along roadsides or paths. They were unwary, allowing a near approach, and more inclined to hide than to fly away. Their striking features were the brilliant colors of the naked skin about the eyes, and their habit of staring at an intruder. Iris dark brown; upper portion of maxilla dusky, lower half and all of the mandible yellow; bare ocular area yellow in front of and below the eye, and intense blue above and behind it; legs flesh color.

67. *Geococcyx affinis* Hartlaub.

The distribution of this roadrunner appears to depend upon the character of the country. It was first seen a little above El Rancho on the road to Guatemala City, where the soil was dry, stony and sparsely covered with deciduous bushes. Near Lake Atitlan, where the ground is equally stubborn, it was found again, but nowhere else. One specimen was taken by Mr. Barber at the last named locality. Iris hazel; eyelid white; bare ocular area varying from lavender near the lids to campanular-blue on the post-orbital part.

68. *Piaya cayana mehleri* Bonaparte.

This species was taken at Los Amates, Gualan, Patulul and San José,—six specimens in all. It was seen at Lake Amatitlan, but at no higher altitude. At Gualan it was common, elsewhere, rather scarce. It frequents thickets. Iris carmine; bill and ocular area yellowish green.

Family **Trogonidæ.**

69. *Trogon mexicanus* Swainson.

Two adult males, an immature male and a female were taken above Tecpam at an altitude of 9,500 feet. None were encountered

below the cypress belt. In this dense timber land it is difficult to bring a trogon down with its feathers on, so numerous are the branches, and so slightly attached are the feathers.

70. *Trogon elegans* Gould.

Two specimens, a female and an immature male, were taken on the hills due north of El Rancho. None were seen elsewhere. Iris dark brown; eyelids orange.

71. *Trogon puella* Gould.

Three adult males were obtained near Patulul, the only locality in which this bird was found. Iris dark brown; bill chrome-yellow; eyelids brown.

72. *Trogon melanocephalus* Gould.

This species was found only on the lower portion of the Atlantic slope. At Los Amates it was common and five were added to the collection at that place. Three more were obtained at Gualan. One of these birds, an adult female, exhibits a case of asymmetrical moult. The six rectrices of one side are fully grown, but the fourth, fifth and sixth rectrices of the other side, reckoning towards the middle, are only a third grown, and of equal length. Another female, which was immature, has the second and fourth rectrices of one side about half grown, and nearly of equal length, the other side being complete. Iris dark brown; eyelids blue.

73. *Trogon caligatus* Gould.

Of this trogon one specimen was obtained at Gualan, one at Mazatenango, and two at Patulul. Individual variation in color is very noticeable. One specimen has a marine blue chest and a bronzed grass-green rump; while another has the chest hyacinth blue, and the rump glistening myrtle-green. Both are adult males. Iris dark brown; eyelids yellow.

74. *Trogon massena* Gould.

A single specimen, the only one seen, was taken at Los Amates. Iris brown.

Family **Momotidae.**

75. *Eumomota superciliaris* (Sandbach).

Red-backed motmots were found only at El Rancho and Los

Amates." At the former place they were rather scarce, and those taken were perceptibly paler on the upper parts than those from the humid low lands. Six specimens were obtained. Iris dark brown.

76. *Momotus lessoni* Lesson.

This motmot was found to be common on the Pacific slope, but only one was seen on the east side, this being taken at Los Amates. Three specimens were secured at Mazatenango, and three at Patulul. It was also observed at San José. Iris maroon.

77. *Momotus castaneiceps* Gould.

This species was found only at El Rancho, where it frequented the dry gullies. This was in January, and although there were numerous holes in the banks where it probably breeds, none of these birds was seen near them. Five specimens were obtained. Iris red.

Family **Alcyonidæ.**

78. *Ceryle alcyon* (Linnæus).

One specimen was taken at Lake Atitlan, where this species was fairly common, on April 10th. This specimen is somewhat peculiar in that it has certain conspicuous areas where there has been no renewal of feathers for a long time. The forehead, scattering feathers on the crown, and about half of the blue pectoral band are faded to ecru drab, and much abraded. The lesser wing coverts are much worn but not so badly faded. In the series of 34 skins possessed by this Museum, only one other, which was taken in Florida in January, shows arrested moult in any degree comparable with this.

79. *Ceryle torquata* (Linnæus).

This species was frequently seen at Los Amates. Only one specimen was taken, though several could easily have been secured, as they were rather easy to approach.

80. *Ceryle amazona* (Latham).

This kingfisher was occasionally seen near Los Amates, but it was invariably shy and only one was taken.

81. *Ceryle americana septentrionalis* Sharpe.

This little kingfisher was found to be common and unsuspicious

wherever there was water. Two were taken at Los Amates, and three at Lake Atitlan. There appears to be a color variation in both sexes, due to age. Judging from a comparison of bills they are the younger birds which have the throat tinged with pinkish buff; while adults have this region white. Fully adult females have the transverse bands across the breast much broader than those which are immature.

82. *Ceryle ænea stictoptera* Ridgway.

The only example of this species that was seen was taken at San José in a dense growth of mangroves on the margin of a salt lagoon, where it spent its time perching on twigs within a foot or two of the water. It exhibited very little fear when approached, and when driven from one rest, quickly chose another but a few feet farther on.

Family **Rhamphastidae.**

83. *Rhamphastos carinatus* Swainson.

This toucan was found common about Los Amates, always in small flocks. They were feeding on a kind of wild fig. In the morning they moved about from place to place, but during the middle of the day they were more quiet, and less frequently observed. Four specimens were collected. The portion of the bill, which on the dried specimen is black, in life is yellowish green. Other portions of the bill do not change very much in drying. The iris is dark sea-green, and the bare ocular area is also green.

84. *Pteroglossus torquatus* (Gmelin).

This species was taken at Los Amates and Mazatenango, and also seen at San José and in the highlands between El Rancho and Guatemala City. Four specimens were secured. The bill does not change color greatly in drying. The elliptical iris is yellow; and the ocular area is lake-red.

85. *Aulacorhamphus prasinus* (Lichtenstein).

A single specimen of this species, the only one seen, was taken at 9,500 feet, near Tecpam.

Family **Galbulidae.****86. *Galbula melanogenia* Sclater.**

Four specimens were taken near Los Amates. None were seen elsewhere. They were quite unsuspicious, and apparently loth to move. They sit in exposed positions, where they can keep an eye on passing insects, and often utter a kind of squeal at the sight of an intruder. Iris dark brown; feet yellow; bill black.

Family **Bucconidae.****87. *Malacoptila inornata* (Du Bus).**

Three specimens, two males and a female, were taken at Los Amates. None were encountered elsewhere. Like the last species, they are quiet birds, not at all timid, and accustomed to watch for insects from the bare branches rather than hunting among the foliage. Iris carmine; feet dull yellow; maxilla black; mandible horn-blue.

Family **Picidae.****88. *Campephilus guatemalensis* (Hartlaub).**

Two specimens were collected at Los Amates and one at Patulul. At the former place the species is rather common, especially among the bambus in the bottom lands. The bambu makes a good sounding-board to give force and character to the woodpecker's drumming. None were seen in other localities than the two above mentioned. Iris yellow.

89. *Celeus castaneus* (Wagler).

This species was found only at Los Amates. It stayed in the swampy places, where the ground was more or less inundated, which made it difficult to obtain, notwithstanding the fact that it was rather unwary. Two females were obtained. In comparing these with a series of fourteen skins of the same sex from various localities, it was noticed that the species is subject to considerable individual variation in color. The pileum on these Guatemalan specimens agrees with the majority, though three of the lot were lighter, and

one somewhat darker. The throat and breast of a Honduras specimen is darker than any of the others. Another specimen from Costa Rica, had the lower back tawny ochraceous, and several others showed traces of it. The width of the irregular bars of black on the under parts varies decidedly in different birds. One had even assumed a rictal streak of red, a character belonging to the other sex. Iris seal-brown.

90. *Dryobates villosus sanctorum* Nelson.

One specimen, a female, was obtained at 8,000 feet, near Tecpam. None were seen lower than the above altitude.

91. *Veniliornis caboti* (Malherbe).

At San José this little woodpecker was rather common, and three specimens were taken at that place. A pair of woodpeckers, apparently of this species, was seen at Los Amates. None were seen outside the *tierra caliente*. Iris brown.

92. *Sphyrapicus varius* (Linnæus).

This sapsucker appears to be generally distributed throughout the country in winter. An adult female was taken December 16th, at 9,500 feet, near Tecpam; another at Lake Atitlan, 5,000 feet, February 27th; and an immature male at Los Amates, 60 feet, January 27th. This last specimen was undergoing a moult from immature to adult plumage. About a quarter of the crown is still black, and the chest is covered with juvenile feathers, the throat, foreneck and breast being in fresh adult plumage. Birds of this species were found singly and not at all commonly.

93. *Ceophlæus scapularis* (Vigors).

In the swamps about Los Amates, *scapularis* was found associated by a common interest with *C. guatemalensis*. Both of these species were usually found in the river bottoms where bambu thickets interspersed the heavy timber. Only one specimen was taken. Iris straw color; bill white; feet horn-blue.

94. *Melanerpes formicivorus* (Swainson).

The only locality where this bird was encountered was in a gorge, at about 7,000 feet, between Lake Atitlan and Tecpam. The road follows this gorge for several miles, and while journeying over it four specimens were secured. Oak and pine trees constitute the forest in this region. Iris pinkish white; bill black.

95. *Centurus santa-cruzi* Bonaparte.

The type of *Centurus santa-cruzi* was described* from a collection made "during a fortnight's scientific tour in Guatemala." In the same lot of skins with the type of *C. santa-cruzi*, were *Cyanocitta stelleri coronata*, a bird of the highlands, above 4,000 feet, and *Ortalis leucogaster*, which is peculiar to the *tierra caliente* of the Pacific slope. The presumption is, that the type, which was evidently a female judging from the description—"capite et corpore subtus griseo-olivaceis"—came from the interior or from the south coast, as a two weeks' visit in those days would scarcely be sufficient for crossing the continent while collecting 39 species of birds. The original description does not well apply to the Pacific coast form, which is Nelson's *fumosus*.

Of this interior form, eight specimens were secured: four from El Rancho, two from Lake Atitlan, one from Lake Amatitlan, and one from Patulul. Those from El Rancho are decidedly larger than any of the others, as may be seen from the appended measurements.

		entire		
El Rancho	Male,	wing 136 mm.;	tail 77 mm.;	culmen 35 mm.
	"	" 144 " ;	" 84 " ;	" 34 "
	Female,	" 136 " ;	" 75 " ;	" 33 "
Atitlan	"	" 138 " ;	" 80 " ;	" 34 "
	Male,	" 129 " ;	" 70 " ;	" 32 "
	"	" 125 " ;	" 64 " ;	" 30 "
Amatitlan	Female,	" 127 " ;	" 71 " ;	" 31 "
Patulul	"	" 122 " ;	" 63 " ;	" 30 "

There is considerable color variation on the under parts, some being darker than others, but excepting this they are quite uniform. This species was found most abundant about El Rancho, where it frequents, almost exclusively, the tree cactus, *Cereus*. They are noisy birds, both vocally and mechanically, spending most of their time either drumming or uttering their harsh cries. Iris of male crimson, of female brown; bill black; feet horn color.

 96. *Centurus santa-cruzi pauper* Ridgway.

Two topotypes of this subspecies from Truxillo, Honduras, were kindly loaned by the authorities at the Smithsonian Institution for comparison with specimens in this Museum. One specimen collected at Los Amates evidently belongs to this form. We also possess two skins from Belize that are typical. The range of this form, then, appears to be the low country adjacent to the Caribbean Sea and extending through Belize, Guatemala, and, at least, a large part of Honduras. It is not a very well defined variety, judging from the

*Proc. Zool. Soc. 1837, p. 116.

material examined. One of the El Rancho skins is indistinguishable in color from the topotypes, and the skins of *santa-cruzi* from Atitlan, Amatitlan and Patulul are but very little larger than the type of *pauper* as given in the original description. There is no doubt, however, that in a series of *pauper* the white bars of the back average narrower than in a series from the interior of Guatemala, and decidedly narrower than in another series from Tamaulipas, where *santa-cruzi* passes over into *aurifrons*. It is indeed singular that this latter form with its heavily barred primaries, so strikingly different from the typical Guatemalan form, has not been honored with a name.

97. *Centurus santa-cruzi fumosus* Nelson.

A specimen taken at San José has the dark breast, spotted rump and wide bill characteristic of this form which was described by Nelson from Chiapas. In each of these respects it differs from all the other specimens of *Centurus* that were taken.

98. *Colaptes mexicanoides* Lafresnay.

This flicker was first seen at Lake Atitlan, and from that altitude (5,000 feet) up to the limit of timber it appears to be tolerably common. Several were seen at 9,500 feet. A nest, containing four addled eggs and one naked young bird less than a week old, was found at Lake Atitlan, April 10th. The male parent was driven from the nest. The female was not seen, though half an hour was spent about the nest, which was in a willow standing in a growth of coffee. The cavity was in decayed wood, and in all respects was similar to that excavated by our northern species. The nestling, which was preserved in formaldehyde, was badly infested with parasitic larvæ, apparently dipterous. Of the four adult males that were taken, one at Lake Atitlan and three near Tecpam, only one has the white rump immaculate.

Family Caprimulgidae.

99. *Antrostomus chiapensis* Nelson. *

At Lake Atitlan, this bird was singing in April and was reported to have begun at least as early as February. Its notes are indistinguishable from those of *A. vociferus*. It was not heard below 5,000 feet. One male was taken at Lake Atitlan and another at Tecpam.

100. *Nyctidromus albicollis* (Gmelin).

Parauques were common up to an elevation of about 4,000 feet, above which none were seen. Three were taken at Los Amates, one at Gualan, two at Lake Amatitlan, one at Patulul and one at San José. It seems as if the upper vertical limit of this species might be approximately coincident with the lower limit of *Antrostomus*. In size these Guatemalan specimens are nearer those from Nicaragua and Costa Rica than they are to Yucatan specimens. One of the Los Amates birds, a male, has the ground color of the crown, nape and interscapular region, a warm brown, similar to walnut-brown of Ridgway's Nomenclature of Colors. A Yucatan specimen taken at San Felipe, is like it except in being a shade paler. Another from Colima in western Mexico, in a much drier climate is yet paler brown, and strikingly different from the normal gray characteristic of average specimens. The occurrence of three pale individuals out of a series of fifteen from Guatemala and southern Mexico indicates dichromatism. In a series of eleven skins from Nicaragua and Costa Rica there is practically no color variation, all being of the gray type.

These birds were often seen in paths, roads, or along the railway, in the evening. In the day time they were usually found on the ground among bushes at the edge of clearings. One of the Los Amates specimens was found, during a cold rainy spell, in a torpid condition, and was picked up alive. At San José three were flushed from the same spot, where they were evidently spending the day in company.

101. *Chordeiles acutipennis texensis* (Lawrence).

The only example of this species met with was at Lake Atitlan, where it was discovered in a tree standing in a field. It proved to be a male in fine plumage.

Family **Micropodidae.**

102. *Streptoprocne zonaris* (Shaw).

This great swift was seen once or twice at Los Amates in January, flying very high over the Motagua River. None were noted again until April, when, in the mountains between Lake Atitlan and Tecpam, at about 6,500 feet, a small colony was discovered. The nesting place was a cliff of friable rock, pierced with cavities running in various directions. A vertical tunnel, or flue, elliptical in cross section and having a major diameter of perhaps twelve feet, was evidently the

home of this colony, as they were seen entering and leaving the lower end of the flue, which is some fifty feet from the foot of the overhanging cliff, and absolutely inaccessible. How far this opening extends upward into the rock, there was no means of ascertaining. It seemed quite dark, and evidently does not continue to the surface above. The birds generally flew high, but early in the morning they occasionally came low enough for a shot. Seven specimens were secured, all in good feather. A few were seen above Tecpam, at 8,000 ft.

103. *Chætura vauxii* (Townsend).

At Mazatenango two pairs of this species were taken, on the 19th of March, from a flock of about fifty. A moult of body feathers was in progress on all of them. The rectrices and remiges, however, show no sign of renewal. Iris dark brown.

104. *Chætura gaumeri* Lawrence.

Two specimens of this swift were secured at Los Amates the last of January. In the dense vegetation of that section it was possible to obtain a swift only by bringing it down as it passed over a shallow stream. Both of these specimens were in unabraded plumage. Iris dark brown.

Family **Trochilidae.**

105. *Phæthornis longirostris* (Lesson & Delattre).

This species was seen only at Los Amates where it was not uncommon in the forest. Only one specimen was secured. Iris dark brown; maxilla black; mandible flesh color; feet pale.

106. *Phæthornis adolphi* Gould.

A single specimen was taken in the swamps near Puerto Barrios. None were observed outside the *tierra caliente*. Iris dark brown; maxilla and distal half of mandible black; basal half of mandible yellow; feet pale.

107. *Campylopterus rufus* Lesson.

The only locality where this fine hummer was seen was near Panajachel, on the north shore of Lake Atitlan, where three were secured. They frequented a sunny portion of a coffee plantation. This was early in April, when the coffee bushes were blooming, which probably

accounts for their concentration at that particular spot. Iris dark brown.

108. *Agytria candida* (Bourcier & Mulsante).

This species, noticeable on account of its white underparts in contrast to the prevailing greenness of the moist lowlands, was frequently noticed among the flowers of certain vines which climb to the tops of the trees near the margins of clearings. Three specimens were taken at Los Amates. None were observed elsewhere. Iris dark brown; maxilla black; mandible pinkish; feet black.

109. *Saucerottea cyanura gautemalæ* subsp. nov.

Type, No. 22,633, ♂ ad., Field Museum of Natural History; collected at Mazatenango, Department of Suchitepequez, Guatemala, by N. Dearborn, March 18th, 1906.

Subspecific Characters: similar to *S. c. cyanura* (Gould), but differs from it in having: nape and interscapular region bottle-green instead of grass-green; rump, middle primary coverts and greater secondary coverts purple-bronze, instead of copper-bronze; greater primary coverts black, instead of bronze; not more than half of the exposed portion of the secondaries chestnut, instead of two-thirds chestnut; and the chestnut under wing coverts tipped with dull purple for at least a quarter of their length, instead of with a mere trace of dull bronze.

Description of type: Crown, nape and interscapulum shining bottle-green; lower back purple-bronze changing to shining plum-purple on the rump; upper and under tail coverts and rectrices steel blue; under parts glittering grass-green; thighs, a narrow line behind the wings, and the bases of the chin-feathers, white; proximal half of the secondaries and the bases of all but the three outer primaries, chestnut; outer primaries and tips of secondaries dusky purple; under wing coverts chestnut, tipped with dull purple; iris dark brown; maxilla and tip of mandible black; base of mandible pale. Wing 53 mm.; tail 31 mm.; culmen, entire, 21 mm., exposed, 18 mm. An adult female, which equals the type in size has the feathers of the chin slightly edged with white, and those of the abdomen edged with gray. Otherwise the sexes are alike. A young male, taken March 15th, has the lower breast and abdomen gray, but is like adults in other particulars.

Remarks: This hummingbird has heretofore been included with *cyanura*, but when compared with specimens of that species from the

type region, northwestern Nicaragua, the differences above outlined are readily made out. This new form will undoubtedly be found to intergrade with *cyanura*. Seven specimens were collected, five coming from Mazatenango and two from Patulul.

March is the month in which this hummingbird usually finishes its moult of remiges, as specimens taken in this month have imperfect wings, while most of those taken in April have them complete and unabraded.

110. *Saucerottea devillii* (Boucier).

Three male specimens were taken, two at Patulul, and one at Lake Amatitlan. This last specimen, taken February 25th, has copper-bronze rectrices, while those taken at Patulul have these feathers bronze-purple. Other specimens in this Museum show a similar variation in color. Iris dark brown; maxilla and tip of mandible black; mandible, except tip, flesh color; feet black.

111. *Amazilis tzactl* (De la Lave).

This species was found only at Los Amates, where three males were secured. Iris dark brown; bill reddish with black tip; feet black. An immature specimen had the entire maxilla black.

112. *Amazilis cinnamomeus* (Lesson).

One specimen was taken at Gualan and two at El Rancho. Apparently they occupy the dry belt between the swamps of the Atlantic slope and the Cordillera. Iris dark brown; bill red except black tip; feet dark.

113. *Amazilis cinnamomeus saturatus* (Nelson).

This form occupies the Pacific slope from the coast up to, at least, 2,000 ft. Three were taken at San José, one at Patulul, and three at Mazatenango. Iris dark brown; maxilla red with black tip; mandible pale with black tip.

114. *Hylocharis leucotis* (Vieillot).

Two females were taken near Lake Atitlan, at 5,000 feet, and another above Tecpañ, at 9,500 feet. In the latter locality they were found in little openings where lumber had been taken out of the cypress forests, while at Lake Atitlan they frequented weedy pastures. Iris dark brown.

115. *Chlorostilbon caniveti* (Lesson).

This species was common in February at Gualan where it was busy with the flowers of a leguminous tree planted to support barbed wire fences. Four males were taken at that place. A female was taken at San José. Iris of male dark brown; base of bill dusky red; tip black.

116. *Petasophora thalassina* (Swainson).

Mr. Barber secured a single specimen, a male, at 9,500 feet, near Tecpam early in January.

117. *Eugenes fulgens* (Swainson).

A male was taken at 7,500 feet, near Tecpam, April 14th. It was attending flowers of an agave. It was near the completion of a moult, the outer primaries being about half grown.

118. *Lampornis amethystinus* Swainson.

Two specimens were taken above Tecpam at 9,600 feet in January by Mr. Barber. Bill black; feet flesh color.

119. *Lamprolæma rhami* Lesson.

A male of this species was taken above Tecpam in January by Mr. Barber.

120. *Anthoscenus superbus pallidiceps* (Gould).

This species was very common in March about the hedges of leguminous trees in the vicinity of Mazatenango and Patulul. Three specimens were secured at the former place and seven at the latter, the sexes being equally represented in the series. Iris dark brown; bill black.

121. *Trochilus colubris* Linnæus.

A female was taken at Gualan on the 14th of February; and a male was taken on April 10th at Lake Atitlan. Neither specimen shows signs of moulting.

Family **Cotingidæ.**

122. *Tityra semifasciata personata* Jardine & Selby.

This species was not seen above 1,800 feet, but below that altitude it was rather common. Its food, so far as could be seen, consisted of the berries of certain tall trees. Three were taken at Los Amates, one at El Rancho, one at Manzatenango, and five at Patulul. In the

series are five adult males, one immature male, two adult females, and two immature females. The immature male was moulting into adult plumage when taken, March 24th. None of the adults were moulting, all being in excellent feather. Iris madder-brown, basal half of bill and bare loreal and ocular areas carmine.

123. *Erator albitorques fraseri* (Kaup).

The only example of this bird that was recognized, was brought down from the top of a pine tree at Los Amates. It was a female in unworn plumage. Iris dark brown; maxilla black; mandible and feet horn-blue.

124. *Platypsaris aglaiae sumichrasti* Nelson

One was taken at Mazatenango and five at Patulul, four of the series being females and the other two immature males. No adult males were seen, nor were any of this species seen at other than the two localities named. They were found in isolated trees or on the outskirts of woodland behaving very like flycatchers (*Tyrannidae*). Iris dark brown.

125. *Lipaugus holerythrus* Sclater & Salvin.

A single specimen, taken at Los Amates, was the only one observed.

126. *Attila citreopygus salvini* Ridgway.

One specimen was taken at Los Amates, one at San José, one at Patulul and two at Mazatenango. There is considerable variation in color among the series of four males taken on the Pacific slope, which is hardly attributable to a difference in age. In fact, no two of them have the interscapular region of the same shade of brown. Iris orange.

127. *Cotinga amabilis* Gould.

One adult male, three immature males and one female were taken at Los Amates where they were found feeding on berries of some small trees. None were seen elsewhere. Iris blue-gray.

Family **Pipridæ.**

128. *Pipra mentalis* Sclater.

At Los Amates, this pipra was rather common in the thick forest. It was usually flitting about the lower branches, and displayed con-

siderable activity. Two males and three females were secured. One of the females, No. 22,669, has two feathers on her head which are red on one side of the rachis, and green on the other. Iris, of male pale straw, of female dark brown; maxilla horn-color; mandible pale; feet pale.

129. *Chiroprion linearis* (Bonaparte).

Near Mazatenango, this engaging bird was in the heavy timber, where its bell-like notes were often the only evidence of its presence obtainable. The only other locality in which it was found was near Patulul. Here it frequented scrub-land, which, in April, is mainly bare of leaves, and a better opportunity of observing its habits was offered. They are active but not diligent, being concerned with social matters for the most part, rather than with those that are economical. One is seen to alight upon a small branch. Directly, another drops down beside him. Both raise their crimson crests and bow very low several times, turning about as they do so, minuet fashion. A third and possibly a fourth, all males, may join in the performance, their regalia in crimson, black, orange and pale blue being fluffed and flaunted, as they salute opposites and corners. Ventriloqual sounds, weirdly clear, hard to analyse or place, intersperse these proceedings. Suddenly one is gone, then another, and another, and the charm of the glen has gone with them. They appear to go singly, and yet to move in the same direction, so these meetings are frequent. By standing in a favorable place, one may witness two or three meetings in the same locality in an hour. Seven males and two females were taken in all. Iris dark brown; legs orange.

130. *Manacus candæi* Parzudaki.

The only specimen of this manakin encountered was at Puerto Barrios. Its whizzing flight led to its discovery. It was a male in adult plumage. Iris dark brown; legs orange.

131. *Scotothorus veræ-pacis* (Sclater).

A female was taken at Los Amates. Iris brown.

Family **Tyrannidae.**

132. *Rhynchocyclus cinereiceps* (Sclater).

This flycatcher was rarely seen, only one male and two females

being taken in all, and only one in a place; Los Amates, Mazatenango and Patulul being the localities from which they were taken. They seem to prefer dense woods to open situations. In appearance they resemble the Empidonaces. Iris pale straw color; maxilla horn-blue; mandible pale; feet pale horn-blue.

133. *Todirostrum cinerium finitimum* Bangs.

In the *tierra caliente* on both sides of the country, this species was found in bushes or low trees in open situations. Two were taken at Los Amates and four at San José. A female from the latter locality has a white spot on the crown. The back of this specimen is olive-green and the under parts are canary yellow. Four others have the olive-green back of a duller tone, ranging toward plumbeous, while the remaining specimen has the interscapular area slate gray, only the rump showing a tinge of olive-green; and the under parts are a paler yellow than is on any of the others. This gray specimen matches very closely others in this Museum from Colombia. Iris straw color.

134. *Oncostoma cinereigulare* (Sclater).

The only specimen obtained, or seen, was taken in heavy timber on the side of a mountain near Patulul.

135. *Pipromorpha assimiles* (Sclater).

This species is represented in the collection by a single specimen taken near Patulul, in thick woods. No others were observed.

136. *Elænia viridicata placens* (Sclater).

At Los Amates, San José and Mazatenango, this flycatcher was rather common, but none were observed higher than about 1,200 feet. Six specimens were taken, each of the above named localities being represented. Iris dark brown.

137. *Elænia flavogastra sub-pagana* Sclater & Salvin.

Three specimens were taken at Lake Atitlan, none being seen elsewhere. Apparently it prefers high, open situations. Iris dark brown.

138. *Myiozetetes similis superciliosus* (Bonaparte).

This noisy flycatcher was taken at Los Amates, Gualan, Patulul and Lake Amatitlan; seven specimens all told. They were usually in pairs, in exposed situations, where sunshine and flying insects are

abundant. As often as one alights near another, there is an outburst of salutations that can be heard all over the neighborhood. Iris dark brown.

139. *Pitangus sulphuratus derbianus* (Kaup).

Derby flycatchers were not noticed above 4,000 feet, but they were rather common up to that altitude. They sat where they could see all about them, and acted very much like our northern kingbird in preferring roadsides, pastures and shores to more densely wooded places. Three specimens were taken, one at Los Amates, one at Lake Amatitlan, and one at Mazatenango. Iris dark brown.

140. *Myiodynastes luteiventris* Sclater.

The only place where the sulphur-bellied flycatcher was found was near Patulul, where it frequented woodland which had been thinned and planted to coffee. Here, for the most part, they remained very high, in the tops of the enormous trees that had been left to shade the coffee saplings. Only two were secured. Iris dark brown.

141. *Megarhynchus pitangua mexicanus* (Lafresnay).

A common bird below 2,000 feet. Specimens, seven in all, were taken at Los Amates, El Rancho, Patulul and Mazatenango. So far as could be observed it subsists mainly on berries. The colors and their distribution on this flycatcher, as seen at a distance, are remarkably like those pertaining to *Pitangus* and *Myiozetetes*, so much so that until one has become somewhat familiar with the notes and manners of each of these species, he finds it difficult to decide which he sees. A female taken March 18th, contained an egg that would have been ready for depositing in two or three days. A nest found about April 1st, at Patulul, was saddled on a bare branch about 40 feet above the ground, and about 8 feet from the body of the tree, safely out of the reach of everything unable to fly. One or both of the birds were by it constantly. This species feeds freely on berries. Iris dark brown.

142. *Onychorhynchus mexicanus* Sclater.

Mr. Barber obtained one specimen and saw another at Patulul. Both were in rather thick woods. Iris hazel; maxilla black; mandible wax yellow at base, shading to brownish at tip; legs and feet clay color.

143. *Terenotriccus erythrurus fulvigularis* (Salvin & Godman).

A single specimen was secured near Los Amates. This appears to extend the range of the species, as hitherto reported, considerably to the northward.

144. *Sayornis nigricans aquatica* (Sclater & Salvin).

A young bird just out of the nest was taken at Lake Atitlan April 8th. At 6,500 feet, near Tecpam, a pair of adults was secured. These specimens have under tail coverts mottled, black and white. The nest at Lake Atitlan was sheltered beneath the eaves of a house. All that were seen were near water, and every movement was similar to that of *S. phæbe* here in the States. Iris dark brown.

145. *Empidonax fulvifrons fusciceps* Nelson.

This little flycatcher was not seen below 5,000 feet, but between that altitude and about 7,500 feet, it was not uncommon. Three were taken at Lake Atitlan and two in a valley between there and Tecpam. It frequents roadsides and pastures where there are scattered bushes to perch upon and to harbor winged insects. Iris dark brown.

146. *Empidonax trailii* (Audubon).

Seven Trail's flycatchers were taken, Los Amates, Mazatenango and San José being the localities from which they were obtained. None were noticed in the highlands. All of this series are easily referable to this subspecies, none being so dark as *alnorum*. The January specimens, as well as those taken in March, with one exception, were in abraded plumage. Iris dark brown.

147. *Empidonax minimus* (Baird).

The least flycatcher winters abundantly in Guatemala. Sixteen specimens were obtained, representing Los Amates, El Rancho, Lake Amatitlan, Patulul, San José, Mazatenango and Lake Atitlan. Those taken in March had pin feathers on crown and throat, and were evidently beginning to assume the nuptial dress. Iris dark brown; maxilla black; mandible pale.

148. *Empidonax flaviventris* (Baird).

Yellow-bellied flycatchers were found at Los Amates in January, but they did not seem to be very common. The last of March and early in April they were plentiful in Mazatenango and Patulul. It is probable they were then migrating northward, and that the major-

ity pass the winter somewhat farther south. One, taken March 30th, and another April 4th, were just completing the renewal of their primary quills. All of the March specimens had the remiges partly renewed. Eleven were obtained in all. Iris dark brown.

149. *Empidonax salvini* Ridgway.

A single specimen of this species was taken near Tecpam, at 9,500 feet.

150. *Empidonax hammondi* (Xantus):

The only individual encountered was near Tecpam, at 6,500 feet, on the 12th of April.

151. *Empidonax trepidus* Nelson.

One specimen was taken in January near Tecpam, at 9,500 feet, by Mr. Barber.

152. *Myiochanes pertinax* (Cabanis & Heine).

At Lake Atitlan and along the road from there to Tecpam this species was not uncommon. It was not seen below 5,000 feet. It frequents solitary trees and acts very much like its congeners here in the States. Nine specimens were taken, all in the second week of April. No sign of moulting is visible on any of them. Iris dark brown.

153. *Myiochanes richardsonii* (Swainson).

One specimen was taken at Lake Atitlan April 8th. No others were noticed.

154. *Myiochanes brachytarsus* (Sclater).

Although an especial effort was made to capture every small flycatcher that could possibly be obtained, none of this species were taken on the Atlantic slope. On the Pacific side, however, it was not uncommon. Two specimens were taken at San José, three at Patulul, and one at Mazatenango. Iris dark brown.

155. *Myiarchus crinitus* (Linnæus).

Two were taken late in January at Los Amates and another at Gualan February 15th. None were seen on the Pacific side. Iris dark brown.

156. *Myiarchus cinerascens* (Lawrence).

Three were taken at El Rancho in January; and at Lake Atitlan,

two on February 26th, and one on the 11th of March, making six in all. Its habitat appears to be confined to the hillsides, where, during the dry season, the trees are quite bare of leaves, and the earth is baked. It appears probable that the winter range of *crinitus*, which is in the moist lowlands, overlaps that of *cinerascens* but little, if any.

157. *Myiarchus nuttingi* Ridgway.

Three were secured at El Rancho, where they were found on the dry hillsides, in company with the last species. Two others were taken at San José. The El Rancho specimens have, at most, only a trace of dusky at the tip of the inner web of the outer rectrices. Those from San José have nearly a third of the width of this web lying next to the rachis, dusky. All of the rectrices, of these latter specimens have a conspicuous dusky line on the inner web, and thus resemble the specimen mentioned by Nelson*, which came from "the boundary line between Nicaragua and Honduras, 180 miles from the Pacific coast." Except in this particular, there does not appear to be any difference between the birds from the two localities above named. Iris dark brown; bill dark horn color; feet black.

158. *Myiarchus mexicanus* (Kaup).

A single example was collected at Los Amates.

159. *Myiarchus lawrenceii* (Giraud).

A common species in moist situations up to at least 5,000 feet. Seventeen specimens were obtained, representing the following localities: Los Amates, Lake Amatitlan, Lake Atitlan, Patulul and San José. Two of these specimens, taken at Lake Atitlan in February, show comparatively little contrast between pileum and back. These were probably migrants from Mexico, as they agree quite closely with a Nuevo Leon specimen. All the rest, including an April bird from Lake Atitlan, are intermediate in size and color between typical *lawrenceii* and *nigricapillus*, one from Los Amates, No. 22,741, being decidedly nearer the latter form than the former. Iris dark brown; bill and feet black.

160. *Tyrannus verticalis* Say.

Three were collected at El Rancho, where they were rather common in January, and another at Patulul. Iris dark brown; bill and feet black.

*Proceedings of the Biological Society of Washington, vol. xvii (1904), p. 38; North American Mainland Myiarchus.

161. *Tyrannus melancholicus satrapa* (Cabanis & Heine).

Six were collected,—Los Amates, El Rancho, Lake Amatitlan and Patulul being represented in the series. Iris dark brown; bill and feet black.

162. *Muscivora forficata* (Gmelin).

Examples were seen at Patulul, near San José, and at Lake Atitlan. One was secured at the last named place. They were invariably in the tops of high, isolated trees and were very wary.

Family **Dendrocolaptidæ.**

163. *Synallaxis erythrothorax* Sclater.

Six specimens were taken at Los Amates, one at Patulul and one at San José. The two from the Pacific side are decidedly paler than those from Los Amates. The backs of the former are dark broccoli brown; the tails are chestnut; the throats are steel-gray, *without* well defined white streaks. Of the latter series, the backs are bistre; the tails seal brown; the throats slate-black *with* well defined white stripes. The pale specimens have shorter bills than the dark series, which may indicate that they are not fully mature. The material at hand is not sufficient to determine the significance of the differences here mentioned. The habits of this bird are altogether different from those of the more typical forms of *Dendrocolaptidæ*. A thick growth of low bushes by the side of a path or a railroad is its favorite cover. It hurries from one clump of bushes to another, and calls and hides, and peeps out and darts back like a wren, which, indeed, its color and manner of flight, as well as its actions, closely imitate. This species is common at low altitudes, but the collector who takes it must be a patient waiter. Iris dark brown.

164. *Glyphorhynchus cuneatus* (Lichtenstein).

A single example, taken at Los Amates, was the only one noted. This specimen, a male, has the diagnostic characters of Sclater's *pectoralis*,* which has of late fallen into synonymy. However, the pale spots on its breast are decidedly wider and the area they occupy is greater than on any of the 9 skins from Costa Rica, 17 from Nicara-

**Glyphorhynchus pectoralis* Sclater; Proceedings of the Zoological Society of London, Part XXVIII (1860), p. 299.

gua and 1 from Brazil, with which it has been compared. A specimen from "Mexico"—exact locality unknown—is similar to it in regard to the breast spots, but differs in being darker on the upper parts. Iris dark brown.

165. *Dendrocinclá anabatina* Sclater.

Three specimens were taken at Los Amates, where the species is not uncommon. Iris brown.

166. *Sittasomus sylvioides* Lafresnay.

Two were taken at Los Amates and four at Patulul. In the latter locality they were found searching the crevices in the bark of the large trees left to shade the coffee. Iris dark brown.

167. *Dendroornis flavigaster* (Swainson).

Three skins and a skeleton were brought from Los Amates and two skins from Patulul. Those from the last named locality are darker above and below, excepting their throats, which, to the contrary, are paler. There is also a difference in size, indicated by wing measurements:

Los Amates	♂ wing	118 m.	Patulul	♀ wing	103
	♂ "	118 "		♀ "	98
	♀ "	109 "			

Iris dark brown; maxilla pale horn; mandible whitish; feet horn-blue.

168. *Dendroornis nana confinis* Bangs.

A pair was taken at Los Amates. They have the throat much paler than specimens from Costa Rica and Panama, and therein confirm Mr. Bangs' diagnosis of his subspecies *confinis*. Iris dark brown; maxilla black; mandible pale; feet horn color.

169. *Picolaptes affinis* (Lafresnay).

A single specimen was taken by Mr. Barber near Tecpam, at 9,500 feet, in January. None were seen elsewhere.

170. *Picolaptes compressus* (Cabanis).

One specimen was taken at Mazatenango, one at San José, and three at Patulul. They are all slightly darker above than a series from western Nicaragua collected at the same time of year.

Family **Formicariidæ.****171. *Thamnophilus doliatus* (Linnaeus).**

This species was found very common at Los Amates, where six were collected, and not rare elsewhere up to about 4,000 feet, one being taken at Lake Amatitlan and one at San José. It was found in dense underbrush making its way among the branches, in pairs, as a rule. Its crest was frequently fluffed up, which gave it a striking appearance. Iris straw; maxilla black, and mandible horn-blue, both sexes; feet horn-blue.

172. *Formicivora boucardi* Sclater.

This species was rather common at Los Amates, where it appeared in pairs or flocks, searching foliage after the manner of *Mniotiltidæ*. They frequent the bambus especially. Two specimens, one of each sex, were collected. Iris dark brown; bill black, except for a toïmial streak of blue affecting both maxilla and mandible; feet horn-blue.

173. *Rhamphocænus rufiventris* (Bonaparte).

A single specimen, the only one seen, was secured at Los Amates. It was flitting about near the ground in thick woods.

174. *Cercomacra crepera* Bangs.

This species was met only at Los Amates, where four specimens were collected. Both sexes are slightly darker than other specimens from Nicaragua and Costa Rica. Iris, male dark brown, female light brown; maxilla, both sexes, black; mandible, male black, female pale; feet horn-blue.

175. *Gymnocichla chiroleuca* Sclater & Salvin.

A pair was found in a bambu thicket bordering a stream, and both were secured. They kept among the lower branches and seemed almost fearless. Bare forehead and ocular region French blue; iris maroon; bill and feet horn-blue.

Family **Corvidæ.****176. *Calocitta formosa azurea* Nelson.**

Two specimens were taken at El Rancho, one at Gualan, three

at Mazatenango, two at Patulul, and one at San José. These specimens present so much variation in color that the entire series of the species *formosa* in this Museum has been brought in for comparison. Aside from the Guatemalan specimens, there are six from Apipiluluea, Guerrero, and one from San Geronomo, Oaxaca, Mexico; one from Salvador; two from San Raphael del Norte, Jinotega, nine from San Geronomo, Chinandega, and one from San Emilis, Lake Nicaragua, Nicaragua; and one from Orosi, northwestern Costa Rica. The half dozen from Guerrero have more or less black on the occiput, black malar patches, and bluish gray backs. These are *C. f. formosa*. The Oaxaca specimen and those from Guatemala, Salvador, Nicaragua and Costa Rica have *no black* on either *occiput* or *malar region*, and are thus clearly differentiated from *C. f. formosa* by these characters. They are not, however, all distinguishable from *C. f. formosa* by the color of their backs. Only those from the Pacific side of western Guatemala have their upper parts so dark blue as to be conspicuously different from it in this respect. This dark blue form is typical of Mr. Nelson's *C. f. azurea*. The specimens from San Raphael del Norte, Nicaragua, are as gray above, as those from Guerrero taken in the same month,—that is to say, as gray as *C. f. formosa*. The specimens from Gualan, El Rancho, Salvador, and Oaxaca are all nearer gray than blue above, while those from Orosi and Chinandega are intermediate between the extremes of blue and gray of this blue-crowned, immaculate-cheeked aggregate, which is conveniently included under the name *azurea*. While there is no difficulty in distinguishing the pale interior form from the darker blue *azurea*, which occurs in its typical state only along the Pacific slope of Chiapas and western Guatemala, specimens from the Pacific coast region from southern Guatemala to northern Costa Rica are intermediates between the two types, and the systematic ornithologist would probably find the worry of disposing of these, so great as to outweigh the satisfaction of recognizing a color variant by name.

The map relating to the distribution of the races of *Calocitta formosa* is based mainly upon specimens in this Museum. Material to fix the eastward extension of *C. f. formosa* is not available. *Azurea* is represented by the letter A, the type locality being indicated by a circle. The letter X shows three points from which have come specimens of the pale form, which has unspotted malar areas. These latter localities are all east of the mountain chain that parallels the Pacific coast, and at least two of them,—that is to say, the interior of Guatemala and eastern Oaxaca,—have a semi-arid, cactus-bearing



soil, quite different from the habitat of typical *azurea*. Specimens from localities marked I are intermediate between typical *azurea* and the pale interior form.

177. *Psilorhinus mexicanus cyanogenys* Gray.

Two of this species were collected at Izabel by Heller and Barber, and four were collected by the writer at Los Amates. It was abundant and noisy in the latter locality. None were found elsewhere. Two of these specimens were evidently immature, having yellow bills and feet. Their bills had begun at the apex and along the culmen to turn black, and their feet were growing dusky from the ankle downward. These jays moved about in flocks, keeping close to the shelter of the woods. Iris dark brown; bill and feet of immature birds yellow, of adults black.

178. *Xanthoura luxuosa vivida* Ridgway.

Two were taken near Patulul, the only locality in which this jay was seen. Here it kept in the tops of high trees in heavy timber, and was rarely seen or heard. Iris yellow.

179. *Cissolopha melanocyanea* (Hartlaub).

This species was first seen at Fiscal, some 20 miles from Guatemala City, on the road from El Rancho. Four were secured at Lake Amatitlan and three at Lake Atitlan. Others were seen at about 6,000 feet on the way from the latter lake to Tecpam, the vertical range being approximately from 4,000 to 6,000 feet. This jay was usually seen in roadside shrubbery and in thickets of small trees. Iris greenish yellow; bill of adults black, of immature specimens, more or less yellow.

180. *Cyanocitta stelleri coronata* Swainson.

Seven birds were taken in the neighborhood of Tecpam at altitudes varying from 6,500 to 9,500 feet, and a nest with a set of four eggs was secured near Chimaltenango, on the road from Tecpam to Guatemala City, April 16th. This nest, which is made principally of grass, and strengthened around the outside by having a few oak twigs woven in, was set in a crotch of a small oak tree about 15 feet from the ground. The tree had no leaves, as the dry season was still on, so the nest and the sitting bird were in full view to all who passed that way. The embryos were large and one of the eggs was ruined in blowing, but the other three and the nest were tied up in a focusing

cloth and bound to the back of the saddle, where they endured the forty-mile journey to Guatemala City in safety. The nest measures 20 cm. (8 in.) in extreme diameter and 9 cm. ($3\frac{1}{2}$ in.) in height. The interior diameter is 10 cm. (4 in.) and depth 4 cm. ($1\frac{5}{8}$ in.). The lining is composed of pine needles, fine rootlets and a few hairs. The eggs average 29 x 22 mm. and are pale Nile blue specked with hair brown. This jay was found only where there were evergreens — pines or cypress. The lower limit of their range appears to coincide almost exactly with that of the upper limit of *Cissolopha*. Iris dark brown; legs and bill black.

Family Icteridae.

181. *Zarhynchus wagleri mexicanus* Ridgway.

At Finca Chapulco near Los Amates, a large flock of this species passed night and morning nearly over the house. On account of their large size and yellow tails they were not at first distinguished from *Gymnostinops*, but after it was discovered that both species were present, the more undulating flight of this one served to establish its identity as far as it could be seen. Only one specimen was obtained. Iris blue; bill yellow at base and horn-blue at tip; feet black.

182. *Gymnostinops montezuma* (Lesson).

Five skins and a skeleton were obtained at Los Amates, where this species was very plentiful. Morning and evening these birds were assembled in flocks evidently owing to their habit of passing the night in company, but during the day it was not at all uncommon to find single birds feeding alone in the deep swamp forest and occasionally uttering their guttural notes. A few were seen at Gualan. Iris dark brown; basal half of bill black, distal half red; bare malar and post-ocular areas flesh color; bare forehead and sides of throat pale rose-purple.

183. *Amblycercus holosericeus* (Lichtenstein).

Nine skins and a skeleton. Specimens were taken at Los Amates, Lake Amatitlan, Lake Atitlan, Patulul and San José. From both coasts up to 5,000 feet it is common. It is a busy and unsuspicious bird, which spends its time in investigating tangles of brush and vines, and in chiseling its way into hard things with its bill like a woodpecker. Its pale bill and eyes give it a peculiar look. The enormous

development of its jaw muscles is remarkable. Iris and bill straw color; feet horn-blue.

184. *Tangavius involucratus* (Lesson).

This species was first noted at El Rancho, but none were obtained there for the reason that they were never encountered outside of the village. One specimen was taken at Lake Atitlan and three others at Tecpam. One of the latter, an immature male, taken April 15th, was beginning to moult around the bill; otherwise all were in firm feather. Iris carmine in an adult male, reddish brown in an immature male, and dark brown in a female.

185. *Megaquiscalus major macrourus* (Swainson).

Great-tailed grackles are to be found in every village from the rubber swamps up to at least 7,500 feet, the highest town visited. They stick so closely to the thickly-settled districts that it is only occasionally that the collector is able to obtain specimens. It is claimed by those who are familiar with this bird in Guatemala that the males are polygamous. At El Rancho a colony nests in a large tree in the village square, under which the Indians daily sit with their baskets of fruit to sell. Iris yellow.

186. *Icterus wagleri* Sclater.

This oriole was first seen at Lake Amatitlan, where a pair was secured in some rushes growing at the margin of the lake. Two others were obtained at Lake Atitlan and one at Tecpam. The last mentioned was immature, having only the chin and lores and a few interscapulars black. Its range is apparently in the high lands. Iris dark brown.

187. *Icterus prothemelas* (Strickland).

A single adult specimen was obtained at Los Amates. Iris dark brown.

188. *Icterus spurius* (Linnaeus).

Guatemala is evidently a favorite region with orchard orioles in winter. They were common at El Rancho the first week in January, where both adult and immature birds were seen gleaning insects in the village trees. Specimens were taken at Los Amates (Jan.), Gualan (Feb.), Lake Amatitlan (Feb.), San José (Mar.), Mazate-nango (Mar.), Patulul (Mar. 31st) — ten in all. Two were adult.

males, two immature males, and six females. Evidently the nature of the country has little or no effect on the winter distribution of this oriole for the *tierra caliente* and the dry highlands, at least up to 4,000 feet, were alike inhabited by it. The only sign of moult in the entire series is on the head of an adult male taken March 31st. Iris dark brown.

189. *Icterus pectoralis* (Wagler).

This species was found only at Patulul, where one adult male and three immature males were secured. Iris dark brown.

190. *Icterus gularis* (Wagler).

The small series of three specimens of this fine oriole presents so much individual variation that it is regrettable that it is not much larger. All are fully adult. The differences may be tabulated as follows:

Locality	Sex	Head, breast, etc.	Wing	Tail	Tarsus
El Rancho	female	orange-chrome	123	109	32.5
"	male	cadmium-orange	129	109	32.5
Mazatenango	"	cadmium-yellow	112	106	29.

All are in unabraded plumage. The Mazatenango specimen has its bill as long as those from El Rancho, but it has less depth at the base by somewhat more than a millimeter. The female is by far the richest colored of the lot. At El Rancho this species was feeding on the rose-red fruits of the tree cactus (*Cereus*). Iris dark brown.

191. *Icterus gairaudii* Cassin.

Two specimens, one from Lake Atitlan and one from Tecpam. Others were seen among some scattered pines on the way between the above mentioned points. It appears to belong to the upland region.

192. *Icterus sclateri* Cassin.

Five examples of this variable species were taken at El Rancho. An adult male has the scapulars and interscapulars solid black; and an immature male has only narrow orange edgings to its otherwise black interscapulars. The females, all immature, have the golden edgings of the interscapulars broader, producing a striped half-and-half appearance. This series of skins, when compared with others in similar plumage from Nicaragua and Oaxaca, has the back decidedly less spotted than either; the coloration of the Guatemala

specimens approaches very closely to that of *gularis*, while those from southern Mexico and Nicaragua, so far as it has been possible to ascertain, are near the color pattern of *pustulatus*. Inasmuch as this oriole was not found elsewhere it is probably chiefly confined to the semi-arid, cactus region. Iris dark brown; maxilla and tip of mandible black; base of mandible and feet horn-blue.

193. *Icterus mesomelas* (Wagler).

Three adults were secured at Los Amates. They were found in the vicinity of cultivated land. This species apparently inhabits the *tierra caliente* exclusively. Iris dark brown.

194. *Icterus galbula* (Linnæus).

Baltimore orioles were very common the latter half of March at Mazatenango and Patulul. None had been encountered prior to that time, which suggests that the majority, at least, winter farther south, and that the latter part of March marks the height of their spring migration in Guatemala. One adult male, one immature male, and two immature females were secured in the above named localities. The young male had just begun to assume the adult nuptial dress, a few scattered black feathers showing on crown, nape and back, while the malar and sub-ocular areas were quite black (March 21st). At Mazatenango these orioles frequented a grove of large coffee trees, which were then in full bloom.

Family **Fringillidae**

195. *Astragalinus psaltria croceus* (Jouy).

One adult male was obtained at Mazatenango, where it was found in a pasture bearing, in addition to grass, a quantity of weeds and scattered bushes. This goldfinch was not met with in any other locality. Iris dark brown.

196. *Spiza americana* (Gmelin).

A small flock, containing five or six individuals, was found in an irrigated field where the grass was tall and green, at Lake Atitlan, April 9th. One was secured. This specimen, an adult male, was in perfect plumage, and showed no indication of moulting in any part. Iris dark brown.

197. *Coturniculus savannarum bimaculatus* Swainson.

Two females were taken at Patulul (March 24th, 26th). They were feeding on weed seeds at the edge of a field of sugar cane. This species was not seen anywhere else. Iris dark brown.

198. *Aimophila ruficauda lawrencei* (Salvin and Godman).

Five specimens, three adult and two apparently immature, were taken at El Rancho. The adults have the clear black lateral crown stripes and auriculars and the larger size that characterize *r. lawrencei* as distinguished from *r. ruficauda*. The two younger specimens have traces of rufous in the lateral crown stripes, and the lower posterior sections of their ear coverts are grayish brown, which give them the appearance of true *ruficauda*,—originally described from Nicaragua. Apparently Salvin and Godman, in writing their description of *ruficauda* and setting the limits of its distribution,* had one of these immature birds in hand, as the specimen which they described came from the same drainage basin, that of the Motagua River, as these El Rancho birds. Therefore, unless these specimens were migrants from Mexico, which is not probable, the Guatemalan birds belong to *lawrencei* and not to *ruficauda*, as currently supposed. This species inhabits the low tangles of thorny shrubs and the brush fences and stone walls of the dry hillsides, remaining much upon the ground, and taking refuge on the far side of its cover when interrupted. Iris of adults orange-red, of immature birds dark brown; maxilla dark horn color; mandible white; feet flesh color.

199. *Aimophila rufescens* Swainson.

This large sparrow was found in moist situations between 5,000 and 6,500 feet. Three were taken at Lake Atitlan and one in a valley below Tecpam. One of the Atitlan specimens has the chest and sides of the neck decidedly grayer, less buff, than either of the other three. This same bird had its tail about three-fourths grown, all the rectrices showing white tips, a character that the others had lost by abrasion. No other sign of moult appears on any of them. Iris mummy-brown; maxilla slate-black; mandible plumbeous.

200. *Junco alticola* Salvin.

Seven were secured near the summit of Sierra Santa Elena, 9,500 feet, where they were found in a field cleared from the cypress forest. None were seen at a lower altitude. Iris orange.

* Biologia Centrali Americana, Aves, Vol. I, p. 396.

201. *Brachyspiza capensis peruviana* (Lesson).

This sparrow was seen within the limits of Guatemala City. Two were taken at Lake Atitlan, which has about the same altitude as Guatemala City, nearly 5,000 feet, and two were taken near Tecpam (7,500 feet), where it was very common. Its song strongly reminds one of the eastern meadow-lark, though, of course, the volume is somewhat less. It is a bird of fields and highways, rather than of shrubbery or timber. Iris dark brown.

202. *Melospiza lincolni* (Audubon).

A female was taken at Lake Atitlan April 8th. Its spring moult had barely commenced on chin and forehead.

203. *Hortulanus maculatus* (Swainson).

The spotted Towhee was first met at Lake Atitlan, where two were obtained. Four others were taken between the Lake and Sierra Santa Elena, above Tecpam. A female, taken at 9,500 feet, April 14th, contained an egg nearly ready to be laid. One of the Atitlan specimens, a female, had orange rufous irides, while in one of the same sex from Sierra Santa Elena they were gray; bill black; feet vinaceous buff.

204. *Melozona biarcuatum* (Prévost).

This species was first seen at Fiscal, on the way from El Rancho to Guatemala City. Thirteen specimens, representing Lake Amatitlan, Lake Atitlan, Patulul and Mazatenango, were secured. It is an inhabitant of scrub land, where stones, weeds and bushes prevail, feeding on the ground and taking refuge in the trees where disturbed. Iris brown.

205. *Arremonops chloronotus* (Salvin).

A pair was secured at Los Amates. None were seen elsewhere. Iris brown; maxilla black; mandible horn-blue; feet pale.

206. *Arremon aurantirostris* Lafresnay.

This species was found only in the deep forest near Los Amates, where it stayed chiefly upon the ground, in the shelter of fallen branches or decaying logs. In the obscurity of the swamp it was difficult to see, the more especially as only one was found in a place. One specimen was taken. Bill orange-red.

207. *Atlapetes gutturalis* (Lafresnay).

Two were taken near Tecpam, at 9,500 feet, by Mr. Barber, in January.

208. *Buarremon brunneinuchus* (Lafresnay).

Three were secured above Tecpam, between 8,500 and 9,500 feet. They were found, among bushes and low trees, usually on the ground. Iris dark brown.

209. *Volatina jacarina splendens* (Vieillot).

This species was found at Los Amates, Gualan, Mazatenango and San José. Six specimens were taken, representing each of the above named localities. On the savannas near Los Amates they were common. They are essentially birds of the field, rank grass and weeds being their usual habitat. None were seen above 1,800 feet. Iris dark brown.

210. *Sporophila morelleti* (Bonaparte).

This seedeater inhabits practically the same situations as the last, though it was found as high as 5,000 feet. Six specimens from Los Amates, four from Mazatenango, three from Patulul, and one from Lake Atitlan, make up the series. Those taken late in March were beginning to moult on the crown and throat. Iris dark brown.

211. *Passerina cyanea* (Linnæus).

Indigo birds were very common, at least up to 4,000 feet, all winter. April 4th is the date on which the last specimen was taken. By the middle of March adult males had about half of the head and breast blue, the back and under parts being still in fall plumage. Males taken in January had a few scattered blue feathers both above and below. Nine specimens were obtained, representing Los Amates, El Rancho, Patulul, Mazatenango and Lake Amatitlan. At Finca Chapulco, near Los Amates, these birds were daily feeding on the ground in the door yard. Often they were found in company with *Sporophila* among the weeds that flourish along the railroad. Iris dark brown.

212. *Passerina ciris* (Linnæus).

The winter distribution of this species, so far as the results of this expedition indicate, is the same as that of *cyanea*. Nine speci-

mens make up the series. April 4th is the latest date of capture. Adult males wore their regalia of red, blue and green all winter. An immature male, taken March 31st, had just begun to come into adult plumage, a few blue feathers showing among the auriculars. This bunting was seen at Gualan, and specimens were taken at Los Amates, El Rancho, Mazatenango, Patulul and Lake Amatitlan. Iris dark brown.

213. *Passerina versicolor* (Bonaparte).

An adult male was taken at El Rancho January 5th. None were observed elsewhere. Iris dark brown.

214. *Cyanocompsa parellina* (Bonaparte).

Two were obtained at Los Amates and two at Patulul. The species was not common. This series comprises two adults of each sex. Their bills are heavier than any of the half dozen specimens from eastern Mexico with which they have been compared. The females are considerably darker than those from Tamaulipas, the back being between Vandyke brown and burnt umber. The males have foreheads pale blue, and occiput and nape azure blue; they also have a wash of azure on the lower breast,—in each of these particulars they differ from Mexican specimens. These specimens are nearer subspecies *parellina* than any other that has been described, both in size and color. The species has not heretofore been recorded south of Mexico, but it extends at least as far as Nicaragua, and when sufficient specimens from the southernmost portion of its range are obtained, it is probable they will be found worthy of description and a name. When this has been done, these Guatemalan birds will probably appear as intermediates. Iris dark brown.

215. *Guiraca caerulea lazula* (Lesson).

The western blue grosbeak was found to be generally distributed, yet nowhere very abundant. Six specimens were taken,—two from El Rancho and one each from Los Amates, Patulul, Lake Amatitlan and Lake Atitlan. An adult male, taken in January, has brown tips to the body feathers, which only need to be abraded to put him into summer dress. A young male, taken February 26th, has a few blue feathers around each eye and one or two on its chest, which mark the beginning of the spring moult. Another, taken just a month later, has the crown, chest and sides of the neck mainly blue. Iris dark brown.

216. *Zamelodia ludoviciana* (Linnæus).

A male was seen at Los Amates in January; a female was taken at Lake Atitlan February 24th; another at San José March 7th; two males and a female at Mazatenango March 17th, and a female at Patulul April 2d. During the latter half of March rose-breasted grosbeaks were common about Mazatenango, where they were in small flocks and apparently migrating. Although a winter resident of Guatemala, it seems probable that the majority go farther south to spend the winter. An adult male taken March 17th, had not even a trace of approaching summer dress. An immature male, taken March 20th, had a few pinfeathers on its chin. A female, taken April 2d, has its under wing coverts, and a suffusion on its throat, geranium-pink. The ovaries were normally developed, and there was no uncertainty about the sex. The upper parts of this specimen are in no way variant from the ordinary type of the sex. Iris dark brown.

217. *Pheuticus aurantiacus* (Salvin & Godman).

The only example of this species that came to notice was a female collected on a mountain north of El Rancho, just below the limit of pine growth. Iris dark brown.

218. *Saltator atriceps* Lesson.

Eight specimens, representing Gaulan, Mazatenango. Patulul and Lake Amatitlan, were obtained. This species frequents the borders of woodland, where it can combine the advantages of the field for food and the woods for shelter. It evidently prefers dry ground at an altitude less than 5,000 feet. Iris brown.

219. *Saltator magnoides medianus* Ridgway.

Three specimens were secured at Los Amates, the only place where this species was found. It was noisy, like others of this genus, calling vociferously when in the trees, but nothing that could be called a song was heard. A flock came to the cleared strip bordering the railroad to feed, and took to the bambus whenever disturbed. Iris dark brown.

220. *Saltator grandis* (Lichtenstein).

This species was seen only on the Pacific side of the divide. San José, Lake Amatitlan and Patulul together furnished seven specimens. Iris dark brown.

Family **Tanagridæ.**

221. *Euphonia affinis* (Lesson).

Specimens, five in all, were taken at Gualan, Patulul, Mazatenango and San José. They were found in scattering trees, on cultivated land, feeding on small fruits. Iris dark brown.

222. *Euphonia hirundinacea* Bonaparte.

This species was seen only at Mazatenango, where three were collected. Iris dark brown.

223. *Euphonia gouldi* Sclater.

A single specimen was taken at Los Amates, the only locality in which this species was noticed. Iris dark brown.

224. *Tanagra cana* Swainson.

Blue tanagers were seen at Los Amates, Mazatenango and San José. Four specimens were collected. Berries form a large part of their fare. Iris dark brown.

225. *Tanagra abbas* Lichtenstein.

This tanager was common locally up to 5,000 feet. In the series of fourteen skins, Los Amates, Patulul, Mazatenango and Lake Atitlan are represented. Iris dark brown.

226. *Piranga rubra* (Linnæus).

One specimen was taken at Los Amates, but not preserved; four were taken at Gualan, two at Patulul and one at Lake Atitlan. The spring moult on an immature male, taken March 31st, had progressed over the sinciput, throat and auriculars. Scattering red feathers had also appeared on the breast, interscapulum and rump. Iris dark brown.

227. *Piranga ludoviciana* (Wilson).

Fifteen specimens, all from the west side of the country, were taken between February 25th and April 2d. Patulul, Mazatenango and Lake Atitlan are the localities from which they came. During the latter part of March these tanagers were so abundant that it is probable they were in migration from some point to the southward, though this species does not appear to have been recorded from south of Guatemala. The spring moult evidently begins early in March,

the yellow median wing coverts and the frontal, loreal and gular feathers being replaced first. Three immature males, taken between the 15th and 31st of March, have new tertials. Iris dark brown.

228. *Piranga leucoptera* Trudeau.

Seven specimens were obtained from Patulul and Mazatenango, the only places where this species was seen. Iris dark brown.

229. *Rhamphocelus passerinii* Bonaparte.

Eight specimens were taken at Los Amates. None were seen away from the swamps, where, however, they are quite plentiful. An immature male in the series is indistinguishable, as to color, from the females, but in size it is fully equal to adult males. This tanager is usually seen around the margins of clearings. Iris of adult male red, of immature male maroon, of female brown; bill plumbeous blue.

230. *Lanio aurantius* Lafresnay.

A single specimen was collected at Los Amates. No others were observed. Iris dark brown.

231. *Eucometis spodocephala* Bonaparte.

Los Amates, one specimen, which, on comparison with specimens of *spodocephala* from Nicaragua and *pallida* from Yucatan, is seen to belong to the former subspecies. Its upper parts are fully as dark as those from Nicaragua though it is slightly paler below. Prof. Ridgway* mentions a Guatemalan specimen that agrees with *pallida*, and a Belize specimen that is intermediate between the two. Iris brown.

232. *Phoenicothera rubica rubricoides* (Lafresnay).

Near Patulul this tanager was rather common in heavy timber on the hillsides. Nine specimens were taken. An adult male in the lot, collected April 3d, has three new olive-green rectrices and nine old red ones—an interesting reversal of the usual order of moult—and furthermore, they are unsymmetrically located, one green feather being an outer rectrix on the right side, while the other two are next the middle on the left side. Iris dark brown.

233. *Phoenicothera salvini* Berlepsch.

A single specimen was collected near Mazatenango, in a low moist locality covered with primeval forest. Iris dark brown.

*Bull. U. S. Nat. Mus. No. 50, part II, p. 141.

234. *Phænicothraupis salvini littoralis* (Nelson).

A pair of this subspecies, taken at Los Amates, agree very closely with specimens from Teapa and Tampico, the colors of the head and throat being of the same shade, and those of the body, wings and tail being but slightly darker than on the corresponding parts of the Mexican specimens. Iris brown.

Family Hirundinidae.**235. *Progne chalybea* (Gmelin).**

Two specimens were taken at El Rancho where this species was very common. Several came regularly to pass the night on the plates of the high veranda of the hotel. Iris dark brown.

236. *Stelgidopteryx serripennis* (Audubon).

Specimens, five altogether, were collected at Mazatenango, Patulul and Lake Atitlan — the time limits being March 17th to April 8th. All of these skins agree in color with others from the States, but the one from Lake Atitlan, a male, has the unusual wing length of 118 mm. Of the other four, two females and a male have a wing length of 104 mm. and the other one, a female, is only 98 mm. Iris dark brown.

237. *Notiochelidon pileata* (Gould).

Coban swallows were plentiful about Tecpam, where one was taken by Mr. Barber in January. April 15th they were drilling holes in the banks by the roadside on the mountain west of the town. They also appeared to be nesting in the walls of the cathedral where bricks had been left out for staging supports.

238. *Iridoprocne bicolor* (Vieillot).

One immature specimen, sex unknown but apparently a female, was taken at Lake Atitlan March 3d, by Mr. Barber.

Family Ptilognathidae.**239. *Ptilogonys cinereus molybdophanes* Ridgway.**

This species was first seen on the road from Lake Atitlan to Tecpam at about 6,500 feet. Above Tecpam at 9,000 to 9,500 feet it was

found in flocks feeding on berries. Six males and two females were collected. The females exhibit a decided difference in color. One has back and breast broccoli brown in decided contrast with an olive-gray head; the other has back smoke-gray, breast drab-gray, and head olive-gray, with only a slight contrast between the interscapulum and crown. Iris dark brown.

Family Vireonidae.

240. *Vireosylva flavoviridis* Cassin.

One specimen was taken at Mazatenango, where this vireo was frequently heard singing in the tops of the enormous trees that form the forest in the low land south of the town. Its song is so similar to that of *V. olivaceus* that, until one of the birds was collected, it was supposed to belong to that species. Iris red-brown.

241. *Vireosylva gilvus swainsonii* (Baird).

One was taken and another seen at El Rancho January 6th. No more were seen until March 24th, when they were found at Patulul in abundance, and so continued, at least, until April 2d. Seven were collected at Patulul. At this time, they were passing through the trees in loose flocks and were evidently migrating. The March and April specimens were undergoing a scattered moult, not a general renewal, on head and breast. Iris dark brown.

242. *Lanivireo flavifrons* (Vieillot).

Yellow-throated vireos were found at Gaulan and near El Rancho. Two specimens were collected at the former place early in February. Iris dark brown.

243. *Lanivireo solitarius* (Wilson).

One was taken at Lake Atitlan April 10th, and another was taken two days later, on the road to Tecpam, at 6,500 feet. Both were near the completion of the spring moult, covering the head, interscapulum and breast,—partially at least. Iris dark brown.

244. *Vireo ochraceus* Salvin.

This species was found only in the mangroves. One specimen was collected at Puerto Barrios and five at San José. At the latter place they were abundant. All of the San José series were olive-

green above and wax-yellow beneath, and all had straw-colored irides. The Puerto Barrios bird was olive-gray above, and only locally and slightly tinged with yellow beneath, and had dark-brown irides. The dark iris was an index of immaturity, and it seems probable that the color variation so conspicuous in any large series of this species is due to difference in age, the pale specimens being younger than those of brighter color.

245. *Vireo bellii* Audubon.

Bell's vireos do not appear to have been heretofore recorded from south of Tehuantepec, but apparently they reach southern Guatemala in considerable numbers. Two were taken at Gualan February 15th, two at San José, March 8th, and one at Patulul March 25th. No evidence of a recent moult is discernible on any of the lot. Iris dark brown.

246. *Vireolanius melitophrys* Du Bus.

One specimen, the only one seen, was taken at Lake Atitlan. Iris Nile-blue.

247. *Vireolanius pulchellus* Sclater & Salvin.

This species was found only in the wooded valleys near Patulul, but even there it was scarce. Two specimens were collected. Iris dark brown.

248. *Cyclarhis flaviventris* Lafresnay.

Nine were collected, in all; one at Mazatenango, five at Patulul and three at Lake Atitlan. The song of this bird is rather loud, smooth and pleasant to hear. Iris orange, and elliptical in shape, with the longer axis horizontal.

Family **Cerebidae.**

249. *Diglossa montana* sp. nov.

Type No. 23,424, ♂ ad., Field Museum of Natural History; collected on Sierra Santa Elena, at altitude 9,500 feet, near Tecpam, by C. M. Barber, January 13th, 1906.

Specific characters: Similar to *D. baritula*, but differs from that species in having the throat slate-gray like the back—not russet like the breast;—and in having the under parts darker,—near mars brown.

Description of type: Pileum, lores and auriculars slate-black; throat, sides of neck, back, lesser wing coverts and upper tail coverts slate color, passing into plumbeous on the rump; wings and tail black, edged with slate; breast, abdomen and under tail coverts mars brown. Wing 58 mm.; tail 45 mm.; exposed culmen 10 mm.; tarsus 18 mm.

Female: Upper parts olive; throat broccoli brown; breast, abdomen, and under tail coverts vinaceus-cinnamon. Wings and tail dusky, edged with olive; secondaries and greater wing coverts edged with buff. Wing 56 mm.; tail 43 mm.; exposed culmen 10 mm.; tarsus 18 mm.

Two specimens were taken in the type locality by Mr. Barber. It is probable that *montana* intergrades with *baritula*, but in the small series at hand—two of the former and seven of the latter—there is no indication of it. This form has hitherto been included under the name *baritula* which was originally applied by Wagler to a specimen from Mexico. Salvin and Godman* mention the difference in color of throat on Mexican and Guatemalan specimens; and Ridgway** calls attention to this and other differences between the single Guatemalan skin in the United States National Museum, and a series from Mexico. Apparently Sclater based his description of *baritula* in the Catalogue of Birds in the British Museum*** upon a Guatemalan specimen, for he says "throat plumbeous like the back."

His final statement that "Guatemalan specimens have *less* (*Italics mine*) plumbeous on the throat, thereby approaching *D. sittoides*" indicates very plainly that he had the two forms confused, for it is the Mexican and not the Guatemalan form that has less plumbeous.

250. *Cyanerpes cyaneus* (Linnaeus).

Two from Patulul and seven from Mazatenango were collected between the 15th and the 31st of March. This series indicates that the body plumage of immature males changes from the green of the first autumn to the adult blue and black by a rapid and thorough moult in March; and that the wing and tail feathers are renewed just enough in advance of the contour feathers to be practically grown when the latter begin to shed about the head and interscapulum. Adults apparently moult more gradually and less completely at this time. These honey creepers were as often seen foraging among the branches of roadside trees as in the woods. They were usually in flocks. Iris dark brown; feet vermilion.

* Biologia Centrali Americana, Aves, I, p. 242.

** Bulletin U. S. National Museum, No. 50, part II, p. 381, footnote.

*** Cat. Birds Brit. Mus. Vol. XI, p. 4.

Family **Mniotiltidae**.**251. *Mniotilta varia* (Linnæus).**

One was taken March 19th at Mazatenango and another, an adult male, at Patulul March 31st. A few were seen at Gualan February 15th. Black-and-white warblers winter here only in small numbers. Iris dark brown.

252. *Helmintheros vermivorus* (Gmelin).

A female was taken at Patulul April 2d. No others were seen.

253. *Helminthophila pinus* (Linnæus).

One specimen was taken at Gualan February 15th. Iris dark brown.

254. *Helminthophila peregrina* (Wilson).

Tennessee warblers were abundant at Mazatenango, and six were collected there between the 19th and 21st of March. Between March 25th and April 2d three others were taken at Patulul. As none were seen elsewhere, it seems probable that these specimens were out of a migration wave sweeping up from a lower latitude. In the series of eight, only one was a male, taken April 2d. All show a condition of scattering moult on pileum, throat and interscapulum. Iris dark brown.

255. *Helminthophila celata lutescens* (Ridgway).

One specimen was taken at 9,500 feet, near Tecpam, December 16th, by Mr. Barber.

256. *Oreothlypis superciliosa* (Hartlaub).

This species was rather common in the cypress-covered heights above Tecpam, where three specimens were taken. It was usually found in bushes and small trees at the edge of the forest or in partial clearings.

257. *Compsothlypis americana ramalinæ* Ridgway.

One was collected at Gualan, February 7th; and another at San José March 7th. The latter was just beginning the spring moult on forehead and auriculars.

258. *Dendroica æstiva* (Gmelin).

The yellow warbler is a common winter resident. Ten specimens were collected, the following localities contributing: Los Amates (Jan.), Lake Amatitlan (Feb.), Patulul, Mazatenango and San José (March). Those taken about March 1st, were just beginning the spring moult, and those taken during the last week of the same month had new feathers on head, neck, interscapulum, breast and flanks; while the lower back, rump and abdomen showed no indication of renewal.

259. *Dendroica æstiva sonora* Brewster.

A female was taken at El Rancho in January, and a male at San José March 9th.

260. *Dendroica bryanti castaneiceps* Ridgway.

Several were seen among the mangroves along the beach at San José, but only one was secured. This one, an immature male, was just beginning to show a few chestnut feathers on its head, March 7th. Iris dark brown.

261. *Dendroica maculosa* (Gmelin).

An abundant winter resident from the swamps along the coast up, at least, to 4,000 feet. Specimens, seven in all, were collected at Los Amates, Lake Amatitlan, Patulul and Mazatenango. The only specimen in moult is a male, taken April 2d, which has a few new feathers on its throat and breast. Iris dark brown.

262. *Dendroica coronata* (Linnæus).

Myrtle warblers were first noticed at sea, December 31st, when two came aboard the ship about 20 miles south of Chinchorow Key. At Belize, January 1st, they were common in the botanical garden. Many were seen at Puerto Barrios and Los Amates in January. Again, April 12th, a few were seen and one, a female in dilapidated plumage, collected near Tecpam, at 7,500 feet. In the low country, they fed mostly upon the ground along the railroad and in door yards.

263. *Dendroica townsendi* (Townsend).

This warbler winters in the pine belt. Four were taken near Tecpam, one in January at 7,600 feet, and three April 12th, at 6,500 feet. None were seen elsewhere.

264. *Dendroica virens* (Gmelin).

One was taken near El Rancho (Jan. 6th), one at Lake Amatitlan (Feb. 27th), and two at Lake Atitlan (April 10th). Few were seen, none below 2,000 feet. One of the April specimens had just begun to moult about the base of the bill and the auriculars.

265. *Oporornis formosa* (Wilson).

Two were secured at Los Amates (Jan. 22d and Feb. 9th) and one at Mazatenango (Mar. 15th).

266. *Oporornis tolmiei* (Townsend).

One was taken at Lake Amatitlan (Feb. 26th), two at Patulul (Mar. 26th) and two at Lake Atitlan (Apr. 10th). It is probable, judging from these dates of occurrence, that at least the Lake Amatitlan specimen was passing the winter at Guatemala. The others may have been passing migrants. One of the April specimens had pinfeathers on gular, frontal and auricular areas.

267. *Seiurus aurocapillus* (Linnaeus).

One was collected at Mazatenango March 21st.

268. *Seiurus noveboracensis notabilis* Ridgway.

One, taken at Los Amates (Jan. 16th) and another at Lake Amatitlan (Feb. 27th) belong to the intermediates between *S. n. noveboracensis* and *S. n. notabilis*, such as occur spring and fall in Chicago, and which are referred to the latter form on account of their color, notwithstanding they are somewhat smaller than typical *notabilis*. This species (subspecies uncertain) was also seen at Puerto Barrios moving about among a pile of mahogany logs on the shore. At Los Amates, they were frequently seen near the river. Both of the specimens collected were undergoing a gradual moult on the head. Iris dark brown.

269. *Geothlypis trichas brachydactyla* Swainson.

Eleven specimens were collected, time and place as follows: Los Amates (Jan.), Lake Amatitlan (Feb.), Mazatenango and San José (March), Lake Atitlan (Apr. 7th). An immature male, taken January 16th, was in autumnal plumage. Another, taken February 1st, had begun to assume the black mask. An adult male, taken April 7th, was moulting on chin and crown. This yellow-throat is a common winter resident in moist, reedy places, up to 5,000 feet and perhaps higher.

270. *Chamaethlypis caninucha* Ridgway.

Two were collected at Mazatenango and two at Patulul. At first sight one is reminded of a yellow-throat (*G. trichas*) but this species lives mainly on the ground in highways and pastures where vegetation is low, rather than in bushes, or rank grass, as do yellow-throats. None were observed on the Atlantic side of the watershed, or either very high or very low on the Pacific side, the more elevated parts of the *tierra caliente* being, apparently, their ordinary habitat. The pair, male and female, taken at Mazatenango (Mar. 19th, 21st) had not begun to moult; but the pair from Patulul (Mar. 24th, 25th) both have pinfeathers on the interramal space. Iris dark brown.

271. *Icteria virens* (Linnæus).

The chat was found very generally distributed. Two were collected at Los Amates (Jan.), one at Lake Amatitlan (Feb.), two at San José (March), one at Mazatenango (March), two at Patulul (Mar., Apr.) and one at Lake Atitlan, (Apr. 7th). In this series of nine birds only one was in moult. This one, an adult male taken March 19th, had the forehead and a patch on the throat in pinfeathers. Iris dark brown.

272. *Wilsonia mitrata* (Gmelin).

One was collected at Los Amates January 26th, and two at Patulul, one March 26th, and the other April 5th. While undoubtedly a winter resident, it is not a common one, as no others were observed. The Patulul specimens were probably passing migrants. Iris dark brown.

273. *Wilsonia pusilla* (Wilson).

A fully adult male was taken at Los Amates January 16th; and a young male and a female were taken above Tecpam (9,000 ft.) April 13th. The female, the only one showing any moult whatever, had numerous scattering pinfeathers on her throat. Iris dark brown; maxilla horn-blue; mandible pale; feet dull yellow.

274. *Setophaga ruticilla* (Linnæus).

An adult male was seen at Belize January 1st, and a female was taken at Gualan February 15th. Iris dark brown.

275. *Setophaga picta guatemalæ* Sharpe.

The only one seen was collected at 6,500 feet, near Tecpam.

276. *Myioborus mimatus flammeus* (Kaup).

One was taken from a flock of warblers, mainly *Oreothlypis superciliosa*, at 8,000 feet near Tecpam. Iris hazel.

277. *Basileuterus rufifrons dugesi* Ridgway.

Three specimens, a male and two females, were taken April 10th at Lake Atitlan. They have been compared with six specimens of *B. r. rufifrons* from eastern Mexico, and with the same number of May specimens of *B. r. dugesi* from Jalisco, and they evidently belong to the latter subspecies. If this form were a permanent resident it would undoubtedly have been reported from Guatemala before this; hence it is reasonable to conclude that these birds were migrants. Such a migration as this must be due to an instinctive impulse, rather than to necessity, as the bird's summer range is not uninhabitable in winter. These specimens were found in the low shrubbery that covers the precipitous shore of the lake near Panajachel.

278. *Basileuterus rufifrons delatirii* Bonaparte.

Seven specimens, five males and two females, were taken at Patulul between March 26th and April 5th. All of these have the nape olive-green, slightly darker than the back. Two other specimens, one of each sex, taken at Lake Amatitlan February 27th, have gray napes, otherwise they are like those from Patulul. According to Ridgway* the gray nape is a characteristic of *delatirii*; but according to Salvin and Godman**, the nape of this form should be "olive like the back."

If this series includes only one form, and that *delatirii*, which appears to be the case, both authorities have hit the truth. Prof. Ridgway kindly allowed the type of *B. r. salvini* Cherrie, to be sent on from Washington for examination in this connection. But none of this series has a trace of white on the ear-coverts, while *salvini* belongs to the group having the lower portion of the auriculars whitish. There is no sign of moult on any of these specimens and there is nothing about them to indicate any difference in age between those with gray napes and those with olive napes. Iris dark brown.

279. *Basileuterus culicivorus* (Lichtenstein).

Two were collected at Patulul. Iris dark brown.

280. *Ergaticus versicolor* (Salvin).

This species was found only in the cypress region above 9,000 feet.

*Bull. U. S. Nat. Mus., No. 50, part II, p. 749.

**Biologia Centrali Americana, Aves, vol. I, p. 177.

It is exceedingly active, so much so that it is rather difficult to obtain. It frequents thickets of young cypress and shrubbery of various sorts. Eight specimens were secured. Iris dark brown.

Family **Mimidae.**

281. *Mimus gilvus guatemalensis* Ridgway.

One specimen was collected at Lake Atitlan, the only locality where this species was found, and it was not common there.

282. *Galeoscoptes carolinensis* (Linnaeus).

Catbirds were common at Belize and at Los Amates. None were observed outside the low, wet *tierra caliente* of the Atlantic side of the country. In the almost impenetrable thickets of that region, the collector rarely knows what he is shooting at, and as a rule it does not matter, but if he hails from the north, he very soon becomes tired of picking up catbirds. Two specimens were brought home, both from Los Amates, one collected in January and the other April 1st, both in excellent plumage.

283. *Melanotis hypoleucus* Hartlaub.

This fine mocker was found between 5,000 feet and 6,500 feet, along the road from Lake Atitlan to Tecpam. It frequents the thick bushes which grow in water-courses, and acts in general like the more familiar members of its family,—the catbird, mockingbird and thrasher. Three specimens were collected. Iris dark brown.

Family **Troglodytidae.**

284. *Heleodytes capistratus* (Lesson).

Seven specimens were collected, the localities represented being El Rancho, Lake Amatitlan, Patulul and San José. The Patulul and San José specimens differ from those from El Rancho in having the back darker and without the obscure bars more or less observable on all the birds from the latter place. Evidently they are intermediates between *H. c. capistratus* and *H. c. nigricaudatus*. Several nests were found in the course of construction as early as February 15th, but so far as could be judged they were built in response to an instinct for

nest building developed long past the needs of procreation, rather than for immediate occupancy by eggs. This wren was usually found in hedges away from the woods. It is a very good singer. Iris reddish brown.

285. *Heleodytes zonatus* (Lesson).

This species was first seen at Lake Amatitlan where two specimens were taken. Four were taken at Lake Atitlan, one at 6,500 feet, between there and Tecpam, and two at 8,400 feet, near the last named town. Its vertical distribution almost exactly supplements that of *H. capistratus*, which was not found higher than Lake Amatitlan. These wrens were for the most part in trees in gorges, though at Lake Atitlan, where they were quite numerous, they were in a small coffee plantation, hedged in between the mountains and the lake. Their ordinary notes are harsh and unpleasant. Iris hazel.

286. *Pheugopedius maculatus umbrinus* (Ridgway).

Two specimens were taken at Los Amates, one at Izabel, one at Patulul and one at San José. Iris brown.

287. *Troglodytes musculus hypaëdon* (Sclater).

This wren was found at Los Amates, where one came daily to the so-called "hotel" and took a look into each room as it made its way along the plate, singing and catching lively tenants of the hostelry. The good offices of this bird were so highly appreciated that no attempt was made to make a skin of it. One was taken at Lake Amatitlan, in some tall grass at the edge of a field, and another at 6,500 feet, on the way from Lake Atitlan to Tecpam. Others were seen in the cypress forest, at 9,500 feet near Tecpam. There is a decided difference in the color of the upper parts of these two specimens, the Amatitlan bird being much the darker; but this difference is probably due to environment, the dark one coming from a moist situation covered with green vegetation, while the other came from a mountain side, which during the dry season has but little verdure. This pale specimen is even lighter than *intermedius* from Costa Rica. The under parts of these two specimens are quite similarly colored. Iris dark brown.

288. *Henicorhina prosthaleuca* (Sclater).

Two were collected at Los Amates and five at Patulul. All were found in moist dark woods. Iris dark brown.

289. *Thryophilus modestus* (Cabanis).

This species was more common on the Pacific side, near the coast, than in the interior. Ten specimens were collected,—Gualan, Lake Atitlan, Lake Amatitlan, Patulul and San José being the localities. These specimens show decided individual variation as to color and distinctness of barring on the tail. The wings and the tails of this series average slightly less than those of Costa Rican specimens. As to color, in this series of ten there are specimens that are lighter than the three adult examples from Costa Rica in this Museum, and others that are darker; while some have the dark tail-bars more distinct, and some less distinct than those from Costa Rica. Iris dark brown.

290. *Thryophilus rufalbus* (Lafresnay).

Two were secured at Mazatenango, the only locality where any were seen. Iris dark brown.

291. *Thryophilus pleurostictus* (Sclater).

A single specimen was collected at Gualan. Iris dark brown.

Family **Certhiidae**.

292. *Certhia familiaris alticola* Miller.

Mr. Barber collected one specimen at 9,500 feet, near Tecpam.

Family **Paridae**.

293. *Psaltiriparus melanotis* (Hartlaub).

Four specimens were collected in the highlands between Lake Atitlan and Tecpam at 5,000 to 6,500 feet. None were seen below this elevation.

Family **Sylviidae**.

294. *Regulus satrapa clarus* subsp. nov.

Type No. 23,270, ♂ ad., Field Museum of Natural History; collected on Sierra Santa Elena, at altitude 9,500 feet, near Tecpam, Guatemala, by N. Dearborn, April 13th, 1906.

Subspecific characters: Similar to *R. s. olivaceous* but having the olive-green of the upper parts distinctly brighter green, and the gray nuchal collar not more than half as wide.

Description of type: Interscapulum, rump and edgings of wing and tail feathers bright olive-green; median area of pileum cadmium-orange, bounded anteriorly and laterally by a line of lemon-yellow; which in turn, is bounded anteriorly and laterally by a line of black; and this, again, is bounded anteriorly and laterally by a line of white, which covers the frontal and superciliary areas. Ocular and malar areas dusky, separated by a narrow white line. Sides of head and cervix olive-gray. Underparts smoke-gray, abdomen and under tail coverts slightly paler than the breast and throat. Wing 54 mm.; tail 40 mm.; exposed culmen 8 mm.; tarsus 18 mm. Greater wing coverts tipped with pale buff.

Adult female: Colored like male except central line of pileum which is entirely lemon-yellow. Wing 52 mm.; tail 37 mm.; exposed culmen 8 mm.; tarsus 17 mm.

Remarks: This form is as much brighter colored than *R. s. olivaceous* as that form is brighter than *R. s. satrapa*; and the gray collar, which on *s. satrapa* invades the interscapulum, and grades so gradually into the olive-green of the rump that the back shows as much gray as it does olive-green; and which in *s. olivaceous* reaches well on to the interscapulum where it ends more abruptly; in *clarus* does not reach the interscapulum at all, the bright olive-green extending clear up over the shoulders. Through the kindness of Dr. Allen of the American Museum of Natural History I have been able to compare these Guatemalan specimens with the specimen named *aztecus* Ridgway, from Mexico City, in the Lawrence collection, which is apparently only an unusually dark example of *olivaceous*, and less like these than is the usual type of *olivaceous*. Three specimens were collected; a male, January 2d, and a male and female April 13th. They were among second growth cypress at altitude 9,500 feet, and considering the dates, were probably residents. At all events the character of the timber land is precisely such as this species ordinarily selects to breed in.

295. *Polioptila cærulea mexicana* Ridgway.

This gnat-catcher is apparently restricted to the low country. Two specimens, both females, were taken,—one at Los Amates January 31st, and the other at San José March 7th. This last bird

was near the end of a spring moult involving nearly all the body plumage. Iris dark brown.

296. *Polioptila albiloris* Sclater & Salvin.

White-lored gnat-catchers were common at El Rancho, where five were collected. One was also taken at Gualan. They were found among the leafless hillside shrubbery, usually in pairs. Iris dark brown.

Family **Turdidae.**

297. *Hylocichla ustulata* Nuttall.

One was taken at Los Amates January 31st, four at Mazatenango March 16th—20th, and six at Patulul March 31st—April 3d. This species was abundant in the last two localities and appeared to be migrating. The one collected at Los Amates was the only one seen on the east side of the divide. None were moulting. Iris dark brown.

298. *Hylocichla guttata auduboni* (Baird).

One specimen was collected near Tecpam, January 1st, by Mr. Barber.

299. *Planesticus grayi* Bonaparte, and

300. *Planesticus grayi tamaulipensis* Nelson.

Fourteen specimens: Los Amates three; El Rancho four; Lake Amatitlan one; Lake Atitlan three; San José one; Mazatenango two. Three of those from El Rancho are indistinguishable from examples of *P. g. tamaulipensis* taken near Tampico. All of the others are darker beneath. The type of *grayi* came from Guatemala, probably from the Pacific coast region, inasmuch as Colonel Velasquez de Leon, who made the collection reviewed by Bonaparte in the *Proceedings of the Zoological Society* for 1837 (pp. 114-119), where *grayi* was first described, was in the country but a fortnight, and several of his birds are restricted to that region.

As to the distribution of the pale and dark forms: the pale one, *tamaulipensis*, originally described by Nelson* from Tamaulipas, and later extended by Hellmayer** to Yucatan and the islands Cozumel, Mugeris and Mecu, evidently occurs in the dry *tierra templada* region

*Auk, 1897, p. 75.

**J. f. O. 1902, p. 50.

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of Guatemala, between the Cordillera and the Atlantic lowlands, and also in the similar region of western Nicaragua. Eight specimens from Nicaragua in this Museum, six from San Geronomo, Chinandega, one from San Rafael and one from San Emilis, Lake Nicaragua, are all indistinguishable from Tampico specimens taken in the same month—April. This thrush frequents trees about cultivated land, and in March and April its song was heard daily on the plantations. None were seen above 5,000 feet. In the dry regions they were found only along streams where trees retain their foliage the year round. Iris brown; bill yellowish green.

301. *Planesticus tristis leucauchen* *Sclater*.

Two specimens were taken at Los Amates late in January. They are not quite typical as to color, being more olive above, less cinereous, than specimens from Vera Paz and western Belize, where the ashy phase of *tristis* seems to culminate. It may not be out of place here to call attention to the fact that there is a skin in this Museum *ex* Boucard, collected in Guatemala, which agrees exactly, as to color, with a topotype (*) of *cnephosa* Bangs and is even smaller.

In his original description of *cnephosa*, Mr. Bangs makes "smaller and darker" the characters that distinguish it from *leucauchen* of Guatemala. As a matter of fact *typical leucauchen* is darker than *cnephosa*, ("*Supra nigricanti-cinereus*"—Sclater). There is, indeed, little to choose between *leucauchen* and *cnephosa* as a name for Los Amates specimens, and it may yet turn out that the latter name is applicable to them. This bird was found only in the dense woods, where it was apparently not at all common. Iris brown; bill straw-color; eye-ring yellow; feet pale.

302. *Planesticus tristis rubicundus* subsp. nov.

Type No. 23,292 ♀ ad., Field Museum of Natural History; collected at Patulul, Solola, Guatemala, March 30th, 1907.

Subspecific characters: Similar to *tristis assimilis* but more ferruginous above, and with wings and tail much darker.

Description of type: Interscapulum a rusty tone of munimy brown, gradually turning to bistre on the crown and auriculars and to olive on the upper tail coverts; primaries and rectrices sooty, edged with sepia; wing coverts and exposed portions of secondaries bistre. Gular area streaked, black and white, jugulum and abdomen white; breast, sides and thighs broccoli brown; under tail coverts with

*No. 188,582 U. S. National Museum.

basal half hair brown and tip white. Wing 119 mm.; tail 95 mm.; exposed culmen 19 mm.; tarsus 28 mm. Iris dark brown.

Remarks: This is a reddish brown form decidedly different from the slaty form of Vera Paz and western Belize; and readily distinguishable from the olive-brown Mexican forms, *t. tristis* and *t. assimilis*. A single specimen, the only one observed, was collected in thick woods near Patulul.

The appended map showing the distribution of the subspecies of *P. tristis* was made according to specimens in this Museum, and Prof. Ridgway's latest work.* Localities are indicated by the initial of the subspecies found there, and type localities by a circle enclosing the initial. *Assimilis*, *tristis* and *rubicundus* are brown forms, while *leucauchen* and *cnephosa* are olive or slaty. It here appears that *rubicundus* is separated from the other brown forms by a dark olive race, *cnephosa*. Incidentally, the peculiar relative distribution of *leucauchen* and *cnephosa* indicates the need of further study to ascertain the exact status of the latter.

303. *Planesticus rufitorques* Hartlaub.

Eleven specimens were collected between 6,500 feet and 9,500 feet altitude, near Tecpam. None were seen below 6,500 feet. The manners and song of this species are almost identical with those of *P. migratoria* in the United States. Specimens were taken in December, January and April. None of them was in moult. There is a decided difference in the color of the abdomen of some of the spring males, which indicates that this area is the last to become clothed in adult plumage. Iris dark brown; bill cadmium-yellow; feet gall-stone yellow.

304. *Catharus frantzii alticola* Salvin & Godman.

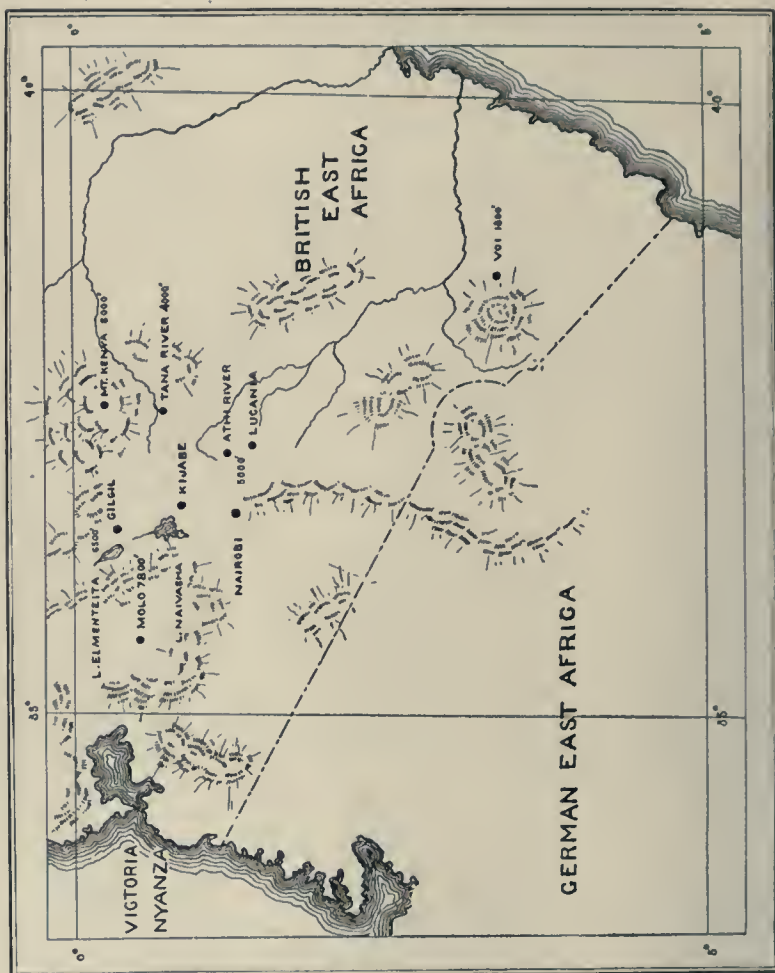
Four were collected in the cypress timber near the summit of Sierra Santa Elena near Tecpam. This species was not seen in any other locality. Iris dark brown.

305. *Sialia sialis guatemalæ* Ridgway.

The bluebird of Guatemala was first seen in the environs of Guatemala City. From that altitude,—about 5,000 feet—up to about 9,000 feet, it was not uncommon in cultivated districts. Two specimens were secured; both near Tecpam. Iris dark brown.

*Bulletin of the U. S. National Museum No. 50, part IV, pp. 108-112.

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CATALOGUE OF A COLLECTION OF BIRDS FROM BRITISH EAST AFRICA

By

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CHICAGO, U. S. A.

May, 1909.

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CATALOGUE OF A COLLECTION OF BIRDS FROM BRITISH EAST AFRICA.

BY NED DEARBORN.

The collection of birds here treated was brought home by the Museum's last expedition to East Africa, 1905-7, made under the direction of Mr. C. E. Akeley. Most of these specimens were collected and prepared by Mrs. Akeley. Colors have been designated according to Ridgway's "Nomenclature of Colors." Specimens without sex marks on labels have been indicated by a ?. Occasional notes concerning habits were made by the collector, and are included in quotation marks. One new species is described. The type locality, if known, follows the original citation of each name. The map indicates the location of the different camps at which specimens were obtained. The sequence of families is that adopted by Dr. Sharpe in his Handbook.

Thanks are hereby gladly rendered to the authorities of the Philadelphia Academy and the Smithsonian Institution for the loan of specimens, and to officials at the John Crerar Library of Chicago for the use of books.

Besides the Catalogue of Birds in the British Museum, Shelley's Birds of Africa and Reichenow's Vögel Afrikas, the papers in the sub-joined list have been of assistance in the determination of species.

ERLANGER. Beiträge zur Vogelfauna Nordostafrikas, Journal für Ornithologie, 1904, pp. 137-244; 1905, pp. 42-158, 433-499, 670-756; 1907, pp. 1-58.

GRANT. On Birds from Somaliland and Southern Abyssinia, Ibis, 1900, pp. 115-178, 304-337.

On the Birds collected by Mr. J. J. Harrison between Zeila and Lakes Rudolf and Barengo, Eastern Africa, Ibis, 1901, pp. 278-299.

On a Collection of Birds made on the White Nile between Khartoum and Fashoda, Ibis, 1902, pp. 393-470.

On the Birds collected by the late W. A. Doggett on the Anglo-German Frontier of Uganda, Ibis, 1905, pp. 199-212.

GRANT AND REED. Birds from Somaliland and Southern Abyssinia, Ibis, 1901, pp. 607-699.

HARTERT. Another small Contribution to African Ornithology, Novitates Zoologicae, VII, pp. 25-53.

On the Birds collected by Wm. Doherty in the Kikuyu Mountains, near Escarpment Station, in British East Africa, Novitates Zoologicae, IX, pp. 620-625.

Ansorge's "Under the African Sun," Appendix.

HINDE. On Birds observed near Machakos Station, in British East Africa, Ibis, 1898, pp. 576-587.

On Further Collections of British East African Birds, Ibis, 1900, pp. 492-501.

JACKSON. List of Birds obtained in British East Africa, Ibis, 1899, pp. 587-640; 1901, pp. 33-97; 1902, pp. 611-643.

On a Collection of Birds made by Mr. Geoffrey Archer during a journey to the Ruwenzori Range, Ibis, 1906, pp. 505-570.

NEUMANN. Beiträge zur vogelfauna von Ost-und Central Afrika, Journal für Ornithologie, 1898, pp. 227-305; 1899, pp. 33-74; 1900, 185-228, 253-313.

Beiträge zu einer Revision der Laniarinen, Journal für Ornithologie, 1899, pp. 387-417.

Vögel vom Schoa und Sud-Aethiopien, Journal für Ornithologie, 1904, pp. 321-410; 1905, pp. 184-243, 335-360; 1906, pp. 229-300.

Revisionen afrikanischer Vogelgruppen, Journal für Ornithologie, 1907, pp. 343-379.

OBERHOLSER. Birds collected by Dr. W. L. Abbott in the Kilimanjaro Region, East Africa, Proceedings of the U. S. National Museum, XXVIII (1905), pp. 823-936.

Notes on Birds from German and British East Africa, Proceedings of the U. S. National Museum, XXX (1906), pp. 801-811.

REICHENOW. Uebersicht der von Dr. Emin Pascha auf seiner Reise von Bagamojo bis Tabora gesammelten Vögel, Journal für Ornithologie, 1891, pp. 139-164.

Zur Vogelfauna des Victoria Njansa Sammlungen Dr. Emin's und Dr. Stuhlmann's, Journal für Ornithologie, 1892, pp. 1-60.

Die von Herrn. Dr. Fr. Stuhlmann in Ostafrika gesammelten Vögel, Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten X (1893), pp. 1-27.

SHARPE. On the Birds collected by Mr. F. J. Jackson during his recent expedition to Uganda through the territory of the British Imperial East African Company, *Ibis*, 1891, pp. 233-260, 587-602; 1892, pp. 152-164, 299-322, 534-555.

On Birds collected during the Makinder Expedition to Mt. Kenya, *Proceedings of the Zoological Society of London*, 1900, pp. 596-609.

On the Collection of Birds made by Dr. A. Donaldson Smith on his last Expedition to Lake Rudolph and the Nile, *Proceedings of the Zoological Society of London*, 1901, pp. 602-622.

On the Collection of Birds made by Sir Harry Johnson, K. C. B., in Equatorial Africa, *Ibis*, 1902, pp. 96-121.

SHELLEY. On a Collection of Birds made by Mr. H. H. Johnston in the Kilimanjaro District, *Proceedings of the Zoological Society of London*, 1885, pp. 222-230.

List of Birds collected in eastern Africa by Mr. Frederick J. Jackson, F. Z. S., within 300 miles of Zanzibar, to the north, and Kilimanjaro, *Ibis*, 1888, pp. 287-307.

On a Collection of Birds made by Emin Pasha in Equatorial Africa, *Proceedings of the Zoological Society of London*, 1888, pp. 17-50.

On the Birds collected by Mr. H. C. V. Hunter, F. Z. S., in Eastern Africa, *Proceedings of the Zoological Society of London*, 1889, pp. 356-372.

On a Collection of Birds from Witu, East Africa, *Ibis*, 1898, pp. 133-142.

STONE. On a Collection of Birds from British East Africa obtained by Mr. George L. Harrison, Jr., *Proceedings of the Academy of Natural Sciences of Philadelphia*, 1905, pp. 755-787.

Family **Struthionidae**.1. **Struthio massaicus** *Neumann*.

Journal für Ornithologie, 1898, pp. 243-246. Ukamba, British East Africa.

♂, Dec., Lucania.

Family **Phasianidae**.2. **Francolinus uluensis** *Grant*.

Ibis, 1892, p. 44. Machako's Station, Ulu Country, British East Africa.

♂, ♂, ♀, Nov., ♀, Oct., Nairobi.

♀, Dec., Lucania.

The sexes are practically alike in color. Females average slightly smaller than males, have the throat clearer white and are without spurs. One of these males, the younger judging by its shorter spurs, is paler, more cinnamonous, than the other, its throat being decidedly cinnamon, and the black marks of its breast feathers much smaller.

3. **Francolinus hildebrandti** *Cabanis*.

Journal für Ornithologie, 1878, pp. 206-243. Teita, British East Africa.

♂, Jan., Naivasha.

♂, Feb., Lake Elmenteita.

The latter specimen has its right upper spur malformed, two cusps appearing in place of one with their bases coalesced.

See NEUMANN, *Journal für Ornithologie*, 1898, pp. 303, 304,—color variations, *F. altumi* and *F. fischeri* = *F. hildebrandti*; GRANT, *Ibis*, 1892, p. 49,—*altumi* = *hildebrandti*.

4. **Francolinus scheutti** *Cabanis*.

Journal für Ornithologie, 1880, p. 351. Lunda, Angola.

♂, March, Molo.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 834,—juvenile plumage; NEUMANN, *Journal für Ornithologie*, 1904, p. 351,—uniformity in equatorial Africa.

5. *Pternistes leucoscepus infuscatus* (Cab.).

Pternistes infuscatus Cabanis, Journal für Ornithologie, 1868, p. 413.

♂, Dec., Lucania.

♀, Nov., Athi River.

See NEUMANN, *Journal für Ornithologie*, 1898, p. 302,— geographical variations; id. *ibid.*, 1904, p. 350,— further notes on variation; ERLANGER, *ibid.*, 1905, pp. 140-144,— distribution and characters of subspecies.

6. *Coturnix delegorguei Delegorgue*.

Voyage dans Africa Australe, II. (1847), p. 615.

♂, July, Naivasha.

Family **Numididae**.

7. *Numida reichenowi* Grant.

Ibis, 1894, pp. 535-538, Makarungu, Ukambani District, East Africa.

3 specimens, Nov., Athi River.

The oldest of these specimens has the apex of its helmet 51 mm. from the frontal end of its base. The helmets of the other two are much less in size. "Sportsmen are in the habit of saving unusually high helmets as trophies."

8. *Guttera pucherani* (Hartl.).

Numida pucherani Hartlaub, Journal für Ornithologie, 1860, p. 341, Zanzibar.

♀, Sept., Mt. Kenya.

"This species inhabits dense jungles and is consequently very difficult to procure. It was only by inducing the natives to set numerous snares that this specimen was obtained."

Family **Pteroclidæ**.

9. *Pterocles gutturalis saturator* Hartert.

Novitates Zoologicæ, VII. (1900), p. 29, Athi Plain, British East Africa.

♂, ♂, ♀, Nov., Athi River.

It will be observed that these specimens are practically topotypes. The males of this form are described as having "the rust colored extremities to the greater series of wing-coverts of a much deeper rufous color," and "the back and rump darker brown than in those from southern Africa."

Family **Treronidae**.

10. ***Vinago calva nudirostris* (Swains.).**

Vinago nudirostris Swainson, Birds of West Africa, II. (1837), p. 205. Senegal.

♂, ♂, May, Nairobi.

See NEUMANN, *Journal für Ornithologie*, 1898, pp. 294, 295,— subspecific relations; SHARPE, *Ibis*, 1902, pp. 98, 99,— geographical forms of *V. calva*; NEUMANN, *Journal für Ornithologie*, 1904, pp. 342–344,— characters and distribution of subspecies.

Family **Columbidae**.

11. ***Columba guinea* Linnæus.**

Systema Naturæ, 10th edition (1758), p. 163. Africa.

♂, Feb., Gilgil.

♂ im., Nov., Athi River.

The immature specimen is fully grown, but lacks the collar of bifurcated cinnamon-colored feathers possessed by adults, this area being blue like the breast with a trace of cinnamon visible.

12. ***Columba arquatrix arquaticula* (Bp.).**

Columba arquaticula Bonaparte, Conspectus Generum Avium, II. (1854), p. 50. Abyssinia.

♀, Dec., Lucania.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, pp. 841, 842,— subspecific characters.

13. ***Turtur lugens* (Rüpp.).**

Columba lugens Rüppell, Neue Wirbelthiere zu der Fauna von Abyssinien, Vögel, 1835, p. 64. Abyssinia.

♂, ♀, Jan., Kijabe.

14. *Turtur semitorquatus intermedius* Erlanger.

Journal für Ornithologie, 1905, p. 124. Roba-Schalo, lake regions of southern Shoa.

♂, Oct., Nairobi.

15. *Turtur capicola tropica* Reichenow.

Ornithologische Monatsberichte, 1902, p. 139. East Africa.

♂, ♀ im., ♀ im., Nov., Athi River.

♀, Feb., Lake Elmenteita.

The immature specimens retain numerous pale edged feathers of their juvenile dress. Otherwise they can scarcely be distinguished from adults.

16. *Stigmatopelia senegalensis æquatorialis* (Erl.).

Turtur senegalensis æquatorialis Erlanger, Journal für Ornithologie, 1905, pp. 117-119. Mountain route from Harar to Adis-Abeda, central Abyssinia.

1 specimen without data.

17. *Cena capensis* (Linn.).

Columba capensis Linnæus, Systema Naturæ, I. (1766), p. 286. South Africa.

♀, Feb., Gilgil.

This specimen has been compared with a female topotype of Mr. Oberholser's *O. c. anonyma* from Kilimanjaro. It is grayer on the inter-scapulum and also on the chest than the topotype, and thus tends to confirm the validity of *anonyma*;* but, on the other hand, the differences between *anonyma* and specimens of true *capensis* from South Africa, appear to the writer to be of a seasonal nature, and not geographical variation.

See ERLANGER, *Journal für Ornithologie*, 1905, pp. 135, 136,—geographical uniformity.

Family Rallidae.

18. *Sarothrura rufa* (Vieill.).

Rallus rufus Vieillot, Nouveau Dictionnaire d'Histoire Naturelle, XXVIII. (1819), p. 564.

♀, March, Molo.

* Proceedings National Museum, Washington, 1905, vol. XXVIII, pp. 843-844.

19. *Limnocorax niger* (Gm.).

Rallus niger Gmelin, *Systema Naturæ*, 1788, p. 717. Cape Good Hope.

♀, Nov., Nairobi.

♂, ♂, ♂ im., Jan., Naivasha.

See ERLANGER, *Journal für Ornithologie*, 1905, p. 87,—seasonal variation.

Family **Colymbidæ.**

20. *Colymbus capensis* (Salvad.).

Podiceps capensis Salvadori, *Annali Museo Civico de Storia Natural di Genova*, 2d. Series, I. (1884), p. 252. Shoa.

♀, Feb., Lake Elmenteita.

This specimen is not in breeding dress, the chestnut and black areas of the head and neck being largely obscured by gray.

See NEUMANN, *Journal für Ornithologie*, 1898, pp. 246, 247,—variation in amount of white on secondaries.

Family **Laridæ.**

21. *Gelochelidon nilotica* (Hasselq.).

Sterna nilotica Hasselquist, *Reise nach Palästina*, 1762, p. 325. Egypt.

♀, Jan., Naivasha.

Family **Recurvirostridæ.**

22. *Himantopus himantopus* (Linn.).

Charadrius himantopus Linnæus, *Systema Naturæ*, 10th ed. (1758), p. 151. Southern Europe.

♂, Feb., Lake Elmenteita.

Family **Scolopacidæ.**

23. *Gallinago media* (Lath.).

Scolopax media Latham, *General Synopsis of Birds*, Supplement I. (1787), p. 292. Kent, England.

♀, Oct., Nairobi.

24. Rhyacophilus glareolus (*Linn.*).

Tringa glareola Linnæus, *Systema Naturæ*, 10th ed. (1758), p. 149. Sweden.

♀, Jan., Naivasha.

♀, Nov., Nairobi.

25. Glottis nebularius (*Gunn.*).

Scolopax nebularius Gunnerus, in Leem's *De Lapponibus Finmarchiæ*, 1767, p. 251. Norway.

♀, Jan., Naivasha.

♂, Oct., Nairobi.

26. Tringoides hypoleucus (*Linn.*).

Tringa hypoleucus Linnæus, *Systema Naturæ*, 10th ed. (1758), p. 149. Sweden.

♀, Nov., Athi River.

Family **Charadriidæ**.

27. Hoplopterus speciosus (*Wagl.*).

Charadrius speciosus Wagler, *Isis*, 1829, p. 649. Kaffirland, South Africa.

♀, ♀, Jan., Naivasha.

28. Stephanibyx melanopterus (*Cretz.*).

Charadrius melanopterus Cretzschmar, Rüppell, *Atlas zu der Reise im nördlichen Afrika*, 1826, p. 46.

♀, Oct., Nairobi.

29. Stephanibyx coronatus (*Bodd.*).

Charadrius coronatus Boddært, *Table des Planches enluminées d'histoire naturelle de M. D'Aubenton*, 1783, p. 49. Cape Good Hope.

♂, Nov., Nairobi.

♂, Jan., Naivasha.

Family **Cursoriidæ**.

30. Cursorius temmincki *Swainson*.

Zoological Illustrations, II. (1822), pl. 106.

1 Molo specimen without date or sex.

♀ juv., Nov., Athi River.

The juvenile specimen is about half grown. Its crown and back are speckled, buff on dusky ground, and the fore breast is also speckled, dusky on cinnamon ground. Its white flanks, black spot on abdomen and broad post-ocular lines of white meeting on the occiput are adolescent characters. The proximal portion of its tarso-metatarsus has more than twice the lateral width of the same part of the adult and is deeply grooved anteriorly.

Family Otididae.

31. *Eupodotis kori* (Burch.).

Otis kori Burchell, Travels in South Africa, I. (1822), p. 393, 402. Griqualand, South Africa.

?, Nov., Athi River.

"Tolerably common on Athi Plains, but very difficult to procure."

See NEUMANN, *Journal für Ornithologie*, 1904, pp. 332, 333,—variation.

32. *Lissotis melanogaster* (Rüpp.).

Otis melanogaster Rüppell, Neue Wirbelthiere zur der Fauna Abyssinien, Vögel (1835), p. 16. Zana Lake, Abyssinia.

♀, Nov., Athi River.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 836,—*lovati* = *melanogaster*; ERLANGER, *Journal für Ornithologie*, 1905, pp. 83, 84,—variation.

Family Gruidae.

33. *Balearica regulorum gibbericeps* (Reichen.).

Balearica gibbericeps Reichenow, *Journal für Ornithologie*, 1892, p. 126. East Africa.

♂, Oct., Nairobi.

Family Ibisidae.

34. *Ibis æthiopica* Latham.

Index ornithologicus, II. (1790), p. 706. Ethiopia.

?, Jan., Naivasha.

35. Hagedashia hagedash (*Lath.*).

Tantalus hagedash Latham, Index ornithologicus, II. (1790),
p. 709. Cape Good Hope.

1 specimen without data.

See ERLANGER, *Journal für Ornithologie*, 1905, p. 99,— variation.

Family **Plataleidae**.

36. Platalea alba *Scopoli*.

Deliciae Floræ et Faunæ Insubricæ, II. (1786), p. 92.

♂, Nov., Athi River.

Family **Ciconiidae**.

37. Ciconia ciconia (*Linn.*).

Ardea ciconia Linnæus, *Systema Naturæ*, 10th ed. (1758), p. 142.
Sweden.

1 specimen without data.

38. Anastomus lamelligerus *Temminck*.

Planches coloriées d'Oiseaux, 1823, p. 236.

♂, Nov., Athi River.

39. Leptoptilos crumeniferus (*Less.*).

Ciconia crumeniferus Lesson, *Traité d'ornithologie*, 1831, p. 585.
Senegal.

♀ im., March, Gilgil.

The evidence of immaturity in this specimen comes from its lack of white edgings to secondaries and greater coverts and from the presence of woolly down on its occiput. It is fully grown.

Family **Scopidae**.

40. Scopus umbretta *Gmelin*.

Systema Naturæ, 1788, p. 618.

♂, ♀, Oct., Nairobi.

Family **Ardeidae**.**41. *Ardea melanocephala* Vigors and Children.**

Narrative of Travels, Africa, II. (1826), p. 201. Lake Tchad.

♂, Jan., Naivasha.

♂, Feb., Lake Elmenteita.

42. *Nycticorax nycticorax* (Linn.).

Ardea nycticorax Linnæus, Systema Naturæ, 10th ed. (1758), pp. 142, 143. Southern Europe.

♀, ♀, Nov., Athi River.

43. *Butorides atricapilla* (Afzelius).

Ardea atricapilla Afzelius, Kongliga Svenska Vetenskaps Akademiciens Handlingar, Stockholm, XXV. (1804), pp. 264–268. Sierra Leone, West Africa.

♀, Nov., Athi River.

44. *Ardeola ralloides* (Scop.).

Ardea ralloides Scopoli, Annus Historico-Naturalis, I. (1769), p. 88.

♀, Nov., Athi River.

45. *Mesophoyx brachyrhyncha* (Brehm).

Herodias brachyrhynchos Brehm, Journal für Ornithologie, 1858. p. 471. Southern Egypt.

♂, Nov., Athi River.

♂, Jan., Naivasha.

1 specimen without data.

46. *Bubulcus ibis* (Linn.).

Ardea ibis Linnæus, Systema Naturæ, 10th ed. (1758), p. 144. Egypt.

♀, ♀, March, Molo.

♀, Jan., Naivasha.

♂, ♂, Nov., ♂, Dec., Athi River.

"This heron consorts with horses, cattle and buffaloes. Its movements were used as an index to the whereabouts of buffaloes in the marshes."

47. *Ardeirallus sturmi* (Wagl.).

Ardea sturmi Wagler, Systema Avium, 1827, p. 191.

♂, Nov., Athi River.

Family **Phænicopteridæ.**

48. **Phænicopterus roseus** *Pallas.*

Zoographia Rosso-Asiatica, II. (1811), p. 207. Caspian.

♀, ♀ im., and 15 specimens unsexed. Feb., Lake Elmenteita.

49. **Phæniconaias minor** (*Geoff.*).

Phænicopterus minor Geoffroy, Bulletin des Sciences de la Société Philomathique de Paris, I. (1798), pp. 97, 98.

21 specimens, unsexed. Feb., Lake Elmenteita.

This species and the preceding were associated together in large numbers at Lake Elmenteita.

Family **Anatidæ.**

50. **Plectropterus gambensis** (*Linn.*).

Anas gambensis Linnæus, Systema Naturæ, 12th ed. (1766), p. 195. Gambia, West Africa.

?, ♀, ♂, Nov., Athi River.

None of this series is in fully adult plumage, though the specimen marked ♂ closely-approximates it. The youngest of the series has the sides of the face, the throat, fore-neck, breast, sides, and abdomen buff or tawny, the abdominal feathers being obscurely barred with dusky.

51. **Chenalopex ægyptiacus** (*Linn.*).

Anas ægyptiacus Linnæus, Systema Naturæ, 12th ed. (1766), p. 197. Egypt.

♀, ♀, ♀, Jan., Naivasha.

52. **Nettion capense** (*Gm.*).

Anas capense Gmelin, Systema Naturæ, 1788, p. 527. Cape Good Hope.

1 specimen, from Lake Elmenteita.

Family **Phalacrocoracidæ.**

53. **Phalacrocorax africanus** (*Gm.*).

Pelecanus africanus Gmelin, Systema Naturæ, 1788, p. 577.

♀, ♀, Oct., Nairobi.

See NEUMANN, *Journal für Ornithologie*, 1898, pp. 251, 252,—variation in color of under parts.

Family **Serpentariidae**.

54. **Serpentarius serpentarius** (Miller).

Falco serpentarius Miller, Various Subjects of Natural History, 1785, pl. 18.

?, Oct., Nairobi.

Family **Falconidae**.

55. **Circus macrourus** (S. G. Gm.).

Accipiter macrourus S. G. Gmelin, Novi-Commentarii Academiae Scientiarum Imperialis Petropolitanae (St. Petersburg), XV. (1771), p. 439.

♀, ♀, Feb., Lake Elmenteita.

♂, Oct., Nairobi.

♂, Nov., Athi River.

56. **Melierax gabar** (Daud.).

Falco gabar Daudin, Traité élémentaire et complet d'Ornithologie, 1800, p. 87. River Swart Kop, South Africa.

♂, Apr., Voi.

57. **Astur tachiro** (Daud.).

Falco tachiro Daudin, Traité élémentaire et complet d'Ornithologie, 1800, p. 90.

♀, Jan., Kijabe.

This specimen is probably not fully adult. Its identification rests on the description given by Reichenow (Vögel Afrikas, I., p. 552). Its bill and foot agree with Neumann's drawings of these parts of *tachiro* in *Journal für Ornithologie*, 1889, p. 41, and not with his drawings of *sparsimfasciatus*.

58. **Accipiter rufiventris** Smith.

The South African Quarterly Journal, 1830, p. 231. South Africa.

♀, Jan., Kijabe.

59. **Buteo augur** Rüppell.

Neue Wirbelthiere zu der Fauna von Abyssinien, Vögel, 1835, p. 38. Abyssinia.

2 specimens without sex or locality. Both have the under parts white, and the tail chestnut.

See NEUMANN, *Journal für Ornithologie*, 1899, p. 50,— variation; id. *ibid.*, 1904, pp. 362–364,— variation.

60. *Aquila rapax* (Temm.).

Falco rapax Temminck, Planches coloriées d'Oiseaux, 1828, pl. 455.

♀, Oct., Nairobi.

1 specimen without data.

61. *Lophoaëtus occipitalis* (Daud.).

Falco occipitalis Daudin, *Traité élémentaire et complet d'Ornithologie*, 1800, p. 40. South Africa.

♀, Jan., Naivasha.

♂, Sept., Mt. Kenya.

62. *Haliaëtus vocifer* (Daud.).

Aquila vocifer Daudin, *Traité élémentaire et complet d'Ornithologie*, 1800, p. 65.

♂, July, Naivasha.

63. *Milvus ægyptius* (Gm.).

Falco ægyptius Gmelin, *Systema Naturæ*, I. (1788), p. 261. Egypt.

♂, Jan., Kijabe.

♀, Oct., Nairobi.

64. *Elanus cæruleus* (Desf.).

Falco cæruleus Desfontaines, *Mémoires Académie Sciences*, Paris, 1787, p. 503. Barbary Coast.

♀, ♀ im., Jan., Naivasha.

♀, Feb., Gilgil.

The immature specimen shows adult plumage on the forehead only, so far as the upper parts of the body are concerned.

65. *Cerchneis tinnunculus* (Linn.).

Falco tinnunculus Linnæus, *Systema Naturæ*, 10th ed. (1758), p. 90. Europe.

♀, Jan., Kijabe.

This specimen is darker than the average of *C. tinnunculus* and smaller, and fits the description of *C. neglecta* (Schleg.) as it is given

in Reichenow's *Vögel Afrikas*, I., p. 643. But in a series of *C. sparverius* there are always occasional specimens that differ from the majority in exactly the same points shown by this skin. Such oddities can be set down only to individual variation, and it is probable that this bird was only an unusually small and dark example of its species.

Family Strigidae.

66. *Asio nisuella* (Daud.).

Strix nisuella Daudin, *Traité élémentaire et complet d'Ornithologie*, 1800, p. 187.

♀, Feb., Lake Elmenteita.

67. *Bubo maculosus* (Vieill.).

Strix maculosus Vieillot, *Nouveau Dictionnaire d'Histoire Naturelle*, 1817, p. 44.

♀, Nov., Nairobi.

See NEUMANN, *Journal für Ornithologie*, 1899, p. 55,—variation; OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 856, 857,—subspecies.

68. *Bubo lacteus* (Temm.).

Strix lactea Temminck, *Planches colorées d'Oiseaux*, II. (1820) pl. 4. Senegal.

♀, Feb., Lake Elmenteita.

?, ?, Sept., Mt. Kenya.

The two latter specimens are darker than that from Elmenteita which appears considerably faded, as if the bird had been much in sunshine.

69. *Strix woodfordi nigricantius* (Sharpe).

Syrnium nigricantius Sharpe, *Bulletin British Ornithologist's Club*, No. XLV. (1897), p. xlvii., Mpapwa, Ugogo, East Africa.

?, ♀, Jan., Kijabe.

There appears to be a little uncertainty as to the correct name for this form. These two specimens are in different phases of plumage, one having a chocolate-brown tone while the other is gray-brown, but they agree in lacking distinct bars on the back, the white appearing in triangular flecks, and therein differ from typical *woodfordi*

which, according to Sharpe* is "regularly banded across with dull fulvous." On the other hand, neither specimen can be called "nigricanti-brunneum," which is set down as the ground color of the upper parts of *nigricantius* in the original description above cited. They do agree with *nigricantius* in the triangular spotting of the back, and in the white superciliary and loreal areas. The chocolate-brown specimen is but sparsely spotted above, and the tips of the breast feathers are near chestnut. The gray-brown specimen has the white spots on the back more numerous and larger, showing a tendency towards bars, and the tips of the breast feathers are buff.

See NEUMANN, *Journal für Ornithologie*, 1899, pp. 55, 56,— variation, *S. suahelicum* and *sansibaricum* = *nigricantius*.

70. *Glaucidium perlatum* (Vieill.).

Strix perlatum Vieillot, Nouveau Dictionnaire d'Histoire Naturelle, VII. (1817), p. 26. Senegal.

♀, Apr., Voi.

♂, Oct., Tana River.

The male is the larger of the two, — wing 107 mm., against wing 103 mm., both being in good feather, and has the entire crown and nape thickly spotted. The female has very few spots on the head.

See NEUMANN, *Journal für Ornithologie*, 1899, pp. 57, 58, age variation, *G. kilimense* = *G. perlatum*.

Family **Aluconidae.**

71. *Aluco capensis* (A. Sm.).

Strix capensis A. Smith, South African Quarterly Journal, 1834, p. 317. South Africa.

♀, March, Molo.

Family **Psittacidae.**

72. *Poicephalus rufiventris* (Rüpp.).

Pionus rufiventris Rüppell, Systematische Uebersicht der Vögel Nord-Ost-Afrika's, 1845, p. 83. Shoa, Abyssinia.

♂, ♀, Apr., Voi.

1 specimen without data.

*Cat. Birds Brit. Mus., II., pp. 267, 268.

73. *Poicephalus gulielmi massaicus* (Fisch. & Reichen.).

Pocephalus massaicus Fischer & Reichenow, Journal für Ornithologie, 1884, p. 179. Gross-Aruscha, Masailand, German East Africa.

♂, ♂, ♂, ♀, ♀, ♀, ♀, ♀, Jan., Kijabe.

One of these females has the red area of its forehead extending back to the middle of its crown, being equal in this respect to any of the males.

Family **Coraciidæ.**

74. *Coracias nævius sharpei* Reichenow.

Ornithologische Monatsberichte, VII. (1899), p. 192. German East Africa.

♂, Feb., Gilgil.

See ERLANGER, *Journal für Ornithologie*, 1905, pp. 475, 458,—distribution of subspecies.

75. *Coracias caudatus suahelicus* Neumann.

Journal für Ornithologie, 1907, p. 593. Uzagara, German East Africa.

♂, Apr., Voi.

"This species, which is active, jay-like in its movements and a swift flier, lives in bush country, where trees are scattered."

Family **Alcedinidæ.**

76. *Ceryle rudis* (Linn.).

Alcedo rudis Linnæus, Systema Naturæ, 10th ed. (1758), p. 116.

♂, Nov., Athi River.

♀, ♀, ♀, Oct., Nairobi.

77. *Corythornis cyanostigma* (Rüpp.).

Alcedo cyanostigma Rüppell, Neue Wirbelthiere zu der Fauna von Abyssinien, Vögel, 1835, p. 70, pl. 24, fig. 2. Abyssinia.

♀, Jan., Naivasha.

♂, Nov., Nairobi.

♀, Nov., Athi River.

78. *Ispidina picta* (Bodd.).

Todus pictus Boddært, Table du Planches Enluminées, 1783, p. 49.
1 specimen, Apr., Voi.

79. *Halcyon chelicuti* (Stanley).

Alcedo chelicuti Stanley, Salt's Travels in Abyssinia, 1814, Appendix, p. 56. Abyssinia.

♀, ♀, Oct., Tana River.

♀, Feb., Lake Elmenteita.

See HARTERT, *Novitates Zoologicæ*, 1900, p. 34,—geographical variation in size; NEUMANN, *Journal für Ornithologie*, 1905, pp. 188, 189,—variation; ERLANGER, *ibid.* 1905, pp. 448, 449,—unites all the forms under *chelicuti*.

80. *Halcyon semicæruleus* (Forsk.).

Alcedo semicærulea Forskål, Descriptiones Animalium, 1775, p. 2. Yemen, Arabia.

♀, Oct., Tana River.

♂, ♀, Nov., Athi River.

The standing of *H. s. hyacinthinus* Reichenow, is apparently uncertain.

See NEUMANN, *Journal für Ornithologie*, 1905, pp. 189, 190; ERLANGER, *ibid.* p. 446.

81. *Halcyon albiventris orientalis* (Peters).

Halcyon orientalis Peters, *Journal für Ornithologie*, 1878, p. 255. Mombassa, British East Africa.

♀, Nov., Athi River

See ERLANGER, *Journal für Ornithologie*, 1905, p. 447.—characters and distribution.

Family **Bucerotidæ.**

82. *Bucorax cafer* (Schl.).

Buceros carunculus, var. *cafer* Schlegel, Museum Pays-Bas, 1862, p. 20.

♀, Nov., Athi River.

♀, Feb., Lake Elmenteita.

83. *Lophoceros nasutus epirhinus* (Sunder).

Buceros epirhinus Sundevall, Oefversicht af Kongliga Vetenskaps Academiens Förhandlingar (Stockholm) 1850, p. 108. South Africa.

♂, ♀, Apr., Voi.

See ERLANGER, *Journal für Ornithologie*, 1905, pp. 439-441,— characters and distribution of subspecies.

84. *Lophoceros melanoleucus suahelicus* Neumann.

Journal für Ornithologie, 1905, p. 187. Morogoro, German East Africa.

♂, Sept., Mt. Kenya.

85. *Lophoceros deckeni* (Cab.).

Buceros deckeni Cabanis, Von der Decken's Reisen, III. (1869) p. 37, pl. 6. East Africa.

♂, ♂, ♀, Apr., Voi.

See ERLANGER, *Journal für Ornithologie*, 1905, pp. 441, 442,— *L. jacksoni* Grant (Ibis, 1891, p. 127) based on young *deckeni*.

86. *Lophoceros erythrorhynchus* (Temm.).

Buceros erythrorhynchus Temminck, Planches Colorées d'Oiseaux, II. (1823) p. 283.

♂, ♀, ♀, Apr., Voi.

87. *Bycanistes cristatus* (Rupp.).

Buceros cristatus Rüppell, Neue Wirbelthiere zu der Fauna von Abyssinien, Vögel, I. (1835) p. 3. Abyssinia.

♂, ♂, ♀, ♀, Sept., Mt. Kenya.

Family **Upupidae.**

88. *Upupa africana* Bechstein.

Latham's Allgemein Uebersicht Vögel, IV. (1811) p. 172. Cape Good Hope.

♀, ♀, Feb., Lake Elmenteita.

Family **Irrisoridae.**

89. *Irrisor erythrorhynchus* (Lath.).

Upupa erythrorhynchus Latham, Index Ornithologicus, I. (1790), p. 280.

♂, ♂ im., Feb., Lake Elmenteita.

The immature specimen differs from the other only in its bill, which is shorter and black, and in its chin, which is buff.

See GRANT, *Ibis*, 1902, pp. 432, 433,— Key to species, and distribution of *I. erythrorhynchus*; id. *ibid.* 1905, pp. 209, 210,— remarks on proposed subspecies.

90. *Rhinopomastus cyanomelas schalowi* (Neum.).

Rhinopomastus schalowi Neumann, *Journal für Ornithologie*, 1900, pp. 221, 222. Usandawe, German East Africa.

♂, ♀, Apr., Voi.

♂, Feb., Lake Elmenteita.

The upper aspect of the pair from Voi is purple, while of the specimen from Lake Elmenteita it is steel blue; furthermore the white bar on the primaries of the latter bird is more than twice as broad as that on the pair from Voi. These differences are conspicuous and if they prove to be constant are quite sufficient to establish a subspecies.

Family **Meropidae**.

91. *Melittophagus pusillus meridionalis* (Sharpe).

Melittophagus meridionalis Sharpe, *Catalogue of the Birds in the British Museum*, XVII, (1892), p. 45.

♂, ♀, Nov., Athi River.

♀, ♀, ♀, ♂ im., Dec., Lucania.

♀, Nov., Nairobi.

1 specimen without data.

None of these specimens has more than a faint trace of blue on the forehead.

See HARTERT, *Novitates Zoologicae*, 1900, p. 35,— synonymy; OBERHOLSER, *Proceedings National Museum*, Washington, 1905, pp. 852–854,— characters and distribution of subspecies; NEUMANN, *Journal für Ornithologie*, 1905, p. 191,— approximation of *cyanostictus* and *meridionalis* in German East Africa; ERLANGER, *ibid.* 1905,— distribution of subspecies.

92. *Melittophagus variegatus oreobates* (Sharpe).

Melittophagus oreobates Sharpe, *Ibis*, 1892, pp. 320, 321. Mt. Elgon, Uganda, British East Africa.

♂ im., Jan., Kijabe.

See JACKSON, *Ibis*, 1902, p. 620,— plate; ERLANGER, *Journal für Ornithologie*, 1905, p. 457,— distribution of subspecies.

93. *Melittophagus bullockoides* (Smith).

Merops bullockoides A, Smith, South African Quarterly Journal, II. (1834) p. 320.

♂, Dec., ♂, ♂, ♂, ♀, ♀, ♀, Jan., Kijabe.

94. *Merops apiaster* Linnæus.

Systema Naturæ, 10th ed. (1758), p. 117.

♂, Oct., Red Sea.

♀, ♀, Oct., Tana River.

Family **Caprimulgidæ.**

95. *Caprimulgus frænatus* Salvadori.

Annali Museo Civico di Storia Natural di Genova, 1884, p. 118. Shoa.

♀, ♀, Nov., Athi River.

♂ juv., Dec., Lucania.

The upper aspect of the juvenile specimen is cinnamon and gray mottled uniformly from head to tail, the body of each feather being finely vermiculated — dusky and buff — and terminated by a cinnamon tip.

See SHARPE, *Ibis*, 1900, p. 499,—characters.

Family **Coliidae.**

96. *Colius striatus affinis* (Shell.).

Colius leucotis affinis Shelley, *Ibis*, 1885, p. 312. East Africa.

♂, ♂, Dec., Lucania.

♂, ♂, ♂, ♂, ♂, ♂, ♀, Jan., Kijabe.

"Climb trees and use their tails as braces like woodpeckers. Occur in flocks."

See SHARPE, *Ibis*, 1902, p. 111,—geographical and individual variation (under *C. berlepschi*); id. *Proceedings of the Zoological Society*, London, 1900, p. 600,—individual variation; HARTERT in Anson's *Under the African Sun*, pp. 332-334,—subspecies of *leucotis*; ERLANGER, *Journal für Ornithologie*, 1905, pp. 487-489,—*leucotis*, *affinis*, *minor* and *nigricollis* subspecies of *C. striatus*; NEUMANN, *ibid.* pp. 403-405,—subspecies of *striatus* and their distribution.

97. *Colius macrourus* (Linn.).

Lanius macrourus Linnæus, *Systema Naturæ*, 12th ed. (1766)
p. 134. Senegal, Western Africa.

♂, Dec., Lucania.

"Few seen. Occur in pairs."

See NEUMANN, *Journal für Ornithologie*, 1900, p. 190,—description of a new subspecies, *pulcher*, which name, if valid, should be applicable to this specimen; GRANT, *Ibis*, 1902, p. 428,—*pulcher* in the synonymy of *macrourus*.

Family **Trogonidæ.**

98. *Aploderma narina* (Steph.).

Trogon narina Stephens, Shaw's General Zoology, IX. (1815) p. 14.
Kaffirland.

♀, ♀, ♀, Jan., Kijabe.

99. *Heterotrogon vittatus* (Shelley).

Haploderma vittatum Shelley, Proceedings of the Zoological Society, London, 1882, p. 306. Mamboio, German East Africa.

♂, ♀, Sept., Mt. Kenya.

"A plentiful species on Mt. Kenya. Not seen elsewhere."

Family **Musophagidæ.**

100. *Turacus hartlaubi* (Fisch. & Reichen.).

Corythaix hartlaubi Fischer & Reichenow, *Journal für Ornithologie*, 1884, pp. 52, 53. Mt. Maeru, Masailand, German East Africa.

?, ♂, ♂, ♂, ♂, Jan., Kijabe.

♂, Apr., Molo.

4 others without data.

101. *Chizærhis leucogaster* Rüppell.

Proceedings of the Zoological Society, London, 1842, p. 9. Abyssinia.

♂, ♀, Apr., Voi.

"Occur in pairs and have a habit of frequently bowing to each other."

Family **Cuculidæ**.

102. *Coccystes glandarius* (Linn.).

Cuculus glandarius Linnæus, Systema Naturæ, 10th ed. (1758)
p. 111.

♀, Dec., Lucania.

♀, Feb., Gilgil.

103. *Coccystes jacobinus* (Bodd.).

Cuculus jacobinus Boddært, Table des Planches Enluminées,
1783, p. 53.

♂, Dec., Lucania.

104. *Coccystes cafer* (Licht.).

Cuculus cafer Lichtenstein, Catalogus rerum naturalium rarissimarum
auktionis lege distrahendarum, Hamburg, 1793, p. 14.

♀, Dec., Lucania.

♀, Jan., Kijabe.

105. *Cuculus canorus* Linnæus.

Systema Naturæ, 10th ed. (1758) p. 110. Europe.

♀, Nov., Athi River.

106. *Metallococcyx smaragdineus* (Sw.).

Chalcites smaragdineus Swainson, Birds of Western Africa, II.
(1837) p. 191.

♂, May, Nairobi.

107. *Chrysococcyx klaasi* (Steph.).

Cuculus klaas Stephens, Shaw's General Zoology, IX, (1815)
p. 128. South Africa.

1 specimen without data.

108. *Chrysococcyx cupreus* (Bodd.).

Cuculus cupreus Boddært, Table des Planches Enluminées, 1783,
p. 40.

1 specimen without data.

109. *Centropus monarchus* Rüppell.

Neue Wirbelthiere zu der Fauna von Abyssinien, Vögel, 1835,
p. 57. Abyssinia.

♂, ?, ? im., Sept., Mt. Kenya.

110. *Centropus superciliosus* Hemprich & Ehrenberg.

Symbolæ Physicæ, 1828, folio r. Arabia.

♀, Nov., Nairobi.

♀, ♀, ♀ Nov., Athi River.

♀, Jan., Naivasha.

♂, Feb., Lake Elmenteita.

♂, Jan., Kijabe.

Family **Indicatoridæ.**

111. *Indicator indicator* (Sparrm.).

Cuculus indicator Sparrman, *Philosophical Transactions*, 1777, p.

43. Cape Good Hope.

♂, Oct., Tana River.

♂, Dec., Lucania.

112. *Indicator exilis teitensis* (Neum.).

Indicator minor teitensis Neumann, *Journal für Ornithologie*, 1900, p. 195. Teita, British East Africa.

♂, Nov., Athi River.

The wing measure of this specimen is 85 mm.

See ERLANGER, *Journal für Ornithologie* 1905, pp. 464-467,—characters of *minor* and *exilis* and their subspecies with their distribution; OBERHOLSER, *Proceedings National Museum*, Washington, 1906, p. 803,—*Melignotheres exilis meliphilus*.

Family **Capitonidæ.**

113. *Trachyphonus boehmi* Fisher & Reichenow.

Journal für Ornithologie, 1884, pp. 179, 180. East Africa between 4° S. and 0°.

♀, April, Voi.

Family **Picidæ.**

114. *Campethera nubica* (Bodd.).

Picus nubicus Boddært, *Table des Planches Enluminées*, 1783, p. 41. Nubia.

♀, Feb., Lake Elmenteita.

See SHARPE, *Ibis*, 1902, p. 637,— variation; ERLANGER, *Journal für Ornithologie*, 1905, pp. 475-477,— individual variation, subspecies; NEUMANN, *ibid.* 1904, pp. 394, 395,— subspecific characters.

115. *Campethera hausburgi* Sharpe.

Bulletin British Ornithologist's Club, X. (1900) p. 36. Mt. Kenya.
♀, Sept., Mt. Kenya.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 874,— *Campethera* supersedes *Dendromus*.

116 *Dendropicus guineensis massaicus* Neumann.

Journal für Ornithologie, 1900, p. 206. Masailand, East Africa.
♀, Oct., Tana River.
♂, Dec., Lucania.

Different authorities hold various opinions as to the status of *massaicus*.

See SHARPE, *Ibis*, 1902, p. 639,— near *cardinalis* (= *guineensis*); NEUMANN, *Journal für Ornithologie*, 1904, pp. 399-402,— recognizes ten subspecies; ERLANGER, *ibid.* 1905, pp. 378-480,— recognizes only five subspecies, holding *massaicus* to be the young of *hartlaubi*.

117. *Iyngipicus obsoletus ingens* Hartert.

Novitates Zoologicae, VII, (1900) p. 33. Nairobi, British East Africa.

♂, Feb., Lake Elmenteita.
♀, locality not given.

The male, judging from the length of its bill and the nature of the feathers on its breast, is not quite mature. Measurements: Male, wing 89 mm., tail 47 mm., entire culmen 17 mm. Female, wing 90 mm., tail (abridged) 40 mm., entire culmen 20 mm.

118. *Mesopicus rhodeogaster* (Fisch. & Reichen.).

Picus rhodeogaster Fischer & Reichenow, *Journal für Ornithologie*, 1884, p. 180, Masailand.

♀, Feb., Gilgil.
♀, Feb., Lake Elmenteita.

See NEUMANN, *Journal für Ornithologie*, 1904, p. 327,— reference to an article in *Ornithologische Monatsberichte* distinguishing *rhodeogaster* from *spodocephalus*; ERLANGER, *ibid.* 1905, p. 473,— holds *rhodeogaster* to be distinct from *spodocephalus*.

119. *Ÿnx pectoralis* (Vig.).

Yunx pectoralis Vigors, Proceedings of Zoological Society, London, 1831, p. 93. South Africa.

♂, Nov., Nairobi.

♂, Jan., Kijabe.

See SHARPE, *Ibis*, 1902, p. 643,—variations; ERLANGER, *Journal für Ornithologie*, 1905,—subspecific characters.

Family **Hirundinidæ.**

120. *Hirundo emini* Reichenow.

Journal für Ornithologie, 1892, pp. 30, 31. Victoria Nyanza, Equatorial Africa.

♂, ♀, ♀, Nov., Nairobi.

121. *Psolidoprocne holomelas massaica* (Neum.).

Psolidoprocne holomelæna massaica Neumann, Ornithologische Monatsberichte, 1904, p. 144. Kikuyu country, British East Africa.

♀, Jan., Kijabe.

The wing measurement of this specimen is 98 mm., tail 75 mm.

"Seen only at Kijabe. Nests under bridges."

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 932,—characters.

Family **Muscicapidæ.**

122. *Alseonax murinus* Fischer & Reichenow.

Journal für Ornithologie, 1884, p. 54. Mt. Maeru, Masailand, East Africa.

♂, Jan., Kijabe.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 908,—juvenile plumage; NEUMANN, *Journal für Ornithologie*, 1905, pp. 206–208,—geographical variation and subspecies.

123. *Bradornis pallidus murinus* (Finsch & Hartlaub).

Bradyornis murinus Finsch & Hartlaub, Vögel Ostafrikas, 1870, p. 866. Benguela.

♂, Jan., Kijabe.

124. *Dioptrornis fischeri* Reichenow.

Journal für Ornithologie, 1884, p. 53. Mt. Maeru, Masailand, East Africa.

♀, Jan., Kijabe.

♂, ♀, March, Molo.

♀, Dec., Lucania.

♂, ♂, May, Nairobi.

See HARTERT, *Novitates Zoologicae*, 1900, p. 37,— validity of *Dioptrornis*; STONE, *Proceedings of the Academy of Natural Sciences*, Philadelphia, 1905, p. 768,— juvenile plumage.

125. *Parisoma jacksoni* Sharpe.

Bulletin British Ornithologist's Club, X. (1899) p. 28. Mt. Elgon, British East Africa.

♂, Dec., Lucania.

See GRANT, *Ibis*, 1900, pp. 153, 154,— distinctive characters (under *P. lugens*); SHARPE, *ibid.* 1892, pp. 302, 303,— full description of a male (under *P. lugens*).

126. *Batis puella* Reichenow.

Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten, X. (1893) pp. 18, 19. Mrabbo, Quilimane, State of East Africa.

♂, Nov., Nairobi.

127. *Trochocercus albonotatus* Sharpe.

Ibis, 1891, p. 121. Mt. Elgon.

♂, ♀, Sept., Mt. Kenya.

128. *Tchitrea ferreti* Guérin.

Revue Zoologique, 1843, p. 162. Abyssinia.

♂, Sept., Mt. Kenya.

?, ♀, Jan., Kijabe.

♂, ♀, Feb., Lake Elmenteita.

See NEUMANN, *Journal für Ornithologie*, 1905, pp. 211–213,— revives *ferreti* and characterizes it; OBERHOLSER, *Proceedings National Museum*, Washington, 1906, pp. 807–809,— characters and distribution of *ferreti*, *perspicillata* and *viridis*.

Family **Pycnopotidae.**

129. *Pycnonotus layardi micrus* Oberholser.

Proceedings of the United States National Museum, XXVIII (1905) pp. 891, 892. Taveta, British East Africa.

♂, Jan., Kijabe.

♂, Dec., Lucania.

♀, ♀, Nov., Athi River.

♂, Oct., Nairobi.

The wing measurements of the three males, taken in the above order, are as follows: 96 mm., 90 mm., 93 mm.,— the average being 93 mm. None of these is in fresh plumage and they all show more or less abrasion. While they are evidently larger than those on which *micrus* was founded, yet they are smaller than the South African form, and serve on the whole to substantiate Mr. Oberholser's new sub-species.

130. *Andropadus latirostris eugenius* (Reichen).

Andropadus eugenius Reichenow, Journal für Ornithologie, 1892, p. 53. Bukoba, Victoria Nyanza region, Central Africa.

♂, ♂, Sept., Mt. Kenya.

131. *Bleda kikuyuensis* (Sharpe).

Xenocichla kikuyuensis Sharpe, Ibis, 1891, pp. 118, 119. Kikuyu Country, East Africa.

♂, ♂, ♀, Sept., Mt. Kenya.

Family **Timeliidae.**

132. *Crateropus sharpei* Reichenow.

Journal für Ornithologie, 1891, p. 432. Kakoma, Unyamwesi, East Africa.

♂, Feb., Lake Elmenteita.

133. *Crateropus hindei* (Sharpe).

Bulletin British Ornithologist's Club, XI, (1900) p. 29. Athi River, British East Africa.

♂, ♀, Oct., Tana River.

134. *Crateropus hypoleucus* Cabanis.

Journal für Ornithologie, 1878, p. 226. Ukamba, East Africa.

♂, Nov., Athi River.

See NEUMANN, *Journal für Ornithologie*, 1904, pp. 548-555,— review of African species of *Crateropus*.

135. *Alcippe abyssinica* (Rüpp).

Drymophila abyssinica Rüppell, Neue Wirbelthiere zu der Fauna von Abyssinien, 1835, p. 108, pl. 40. Abyssinia.

♂, ♂, Sept., Mt. Kenya.

Family **Turdidae.**

136. *Planesticus elgonensis* (Sharpe).

Merula elgonensis Sharpe, Ibis, 1891, p. 445. Mt. Elgon, British East Africa.

♀, Jan., Kijabe.

♀, March, Molo.

137. *Bessonornis caffra iolæma* Reichenow.

Ornithologische Monatsberichte, VIII, (1900) p. 5. German East Africa.

♂, Jan., Kijabe.

♀, March, Molo.

See SHARPE, *Ibis*, 1901, p. 71,—*mauensis* Neumann = *iolæma*.

138. *Alethe akeleyæ* sp. nov.

Type, No. 32512, Field Museum of Natural History; collected on Mt. Kenya, British East Africa, by Mrs. Carl E. Akeley, September 19, 1906. Sex not recorded.

Description of the type: Pileum uniform slate color, cervix sepia, which gradually changes on the back and scapulars to burnt umber, and to a bright rusty brown on the rump and upper tail coverts. The greater, median and lesser wing coverts, together with the outer margins of the rectrices and secondaries, are vandyke brown. The outer margins of the primaries are hair brown. The primary coverts and the inner webs of the rectrices and remiges, as seen from above, are dark sepia, the rhachides being dark above and pale beneath. The throat and middle of breast and abdomen are buffy white. The chest, sides and under tail coverts are buff. A superciliary line, white anteriorly but turning to gray behind the eye, extends from the base of the maxilla nearly to the posterior end of the ear-coverts. The lores, a narrow eye-ring and a marginal line along the sides of the mandible and into inter-rhamal apex are slaty black. The ear coverts are hair-brown. The malar and post auricular regions and sides of throat are slate-gray, slightly lighter than the pileum.

The bend of the wing, the under wing coverts and the axillaries are white, and the inner margins of the secondaries are pale buff. The bill of the dry skin is black, and the feet pale. On the ends of the greater wing coverts are flecks of cinnamon, such as appear in the first winter plumage of thrushes of the genus *Hylocichla*. Wing 94 mm.; tail 65 mm.; exposed culmen 16 mm.; tarsus 28 mm.

This species resembles *poliocephala* more than any other yet described. It is named in honor of Mrs. Akeley, whose pluck and endurance enabled her to contribute very materially to the results of the memorable African expedition conducted by her husband in 1905-07.

139. *Tarsiger orientalis* Fischer & Reichenow.

Journal für Ornithologie, 1884, p. 57. Pangani, German East Africa.

♂, ♀, Sept., Mt. Kenya.

140. *Pratincola axillaris* Shelley.

Proceedings of the Zoological Society, London, 1884, pp. 556, 557. Mt. Kilimanjaro, German East Africa.

♂, ♂, ♀, Jan., Kijabe.

♂, ♀, Mar., ♀, Apr., Molo.

141. *Myrmecocichla æthiops cryptoleuca* (Sharpe).

Myrmecocichla cryptoleuca Sharpe, Ibis, 1891, p. 445. Kikuyu, British East Africa.

♂, Jan., Kijabe.

♂, Nov., ♀, Apr., Nairobi.

142. *Saxicola pleschanka* (Lepech.).

Motacilla pleschanka Lepechin, Novi Commentarii Academiae Scientiarum Imperialis Petropolitanae (St. Petersburg) XIX. (1770) p. 503.

♂, ♂, ♀, Dec., Mt. Lucania.

See ERLANGER, *Journal für Ornithologie*, 1905, p. 748,— seasonal variation; NEUMANN, *ibid*, 1906, p. 293,— variation.

143. *Saxicola ænanthe* (Linn.).

Motacilla ænanthe Linnæus, Systema Naturæ, 10th ed. (1758), p. 186.

♂, ♀, ♀, ♀, Dec., Lucania.

♂, ♂, ♀, Oct., ♀, ♀, Nov., Nairobi.

See ERLANGER, *Journal für Ornithologie*, 1905, p. 747,— sub-species reduced.

Family Sylviidae.

144. *Acrocephalus arundinaceus* (Linn.).

Turdus arundinaceus Linnæus, Systema Naturæ, 10th ed., I. (1758) p. 170.

♀, Dec., Lucania.

1 specimen without data.

145. *Cisticola chubbi* Sharpe.

Ibis, 1892, p. 157. Mt. Elgon, British East Africa.

♀, Nov., Nairobi.

146. *Cisticola robusta nuchalis* (Reich.).

Cisticola nuchalis Reichenow, Ornithologische Monatsberichte, 1893, p. 61. Kagera.

♂, Nov., Nairobi.

The measurements of this skin are: Wing, 69 mm.; tail, 50 mm.; tarsus, 26 mm. There are no black streaks on its sides, and in all particulars it conforms to the original description of *C. ambigua* Sharpe,* which appears to be a synonym of *nuchalis*.

See REICHENOW, *Vögel Afrikas*, III. p. 555; SHARPE, *Ibis*, 1901, p. 60,—remarks on *nuchalis* and *ambigua*; NEUMANN, *Journal für Ornithologie*,—subspecies of *robusta*.

147. *Cisticola lugubris* Rüppell.

Neue Wirbelthiere zu der Fauna von Abyssinien. Abyssinia.

♂, Oct., Nairobi.

♂, ♂, Dec., Lucania.

?, ♀, Kijabe.

The crown of the Nairobi specimen is mars brown with indistinct stripes of dusky. The feathers of the back are black with lateral margins of vinaceous-cinnamon, and the outer margins of the remiges are cinnamon-rufous. This bird is in the plumage described by Neumann as *C. l. suahelica*†, from German East Africa. The other four specimens have the crown mainly dusky, the feathers being bordered with mars brown. The feathers of the back are streaked with blackish brown and bordered with gray. The outer margins of the remiges are broccoli brown. In dimensions and in

* Bulletin, British Ornithologists, Club, XI (1900) p. 28.

† *Journal für Ornithologie*, 1906, p. 272.

the shape and color of bills this series is quite uniform. A specimen loaned for examination by the Academy of Natural Sciences of Philadelphia has the light brown crown of this Nairobi bird, and the gray back of the others, and is therefore a connecting link between the two plumages, which are so decidedly different that, without more evidence than these five specimens furnish, they would be looked upon as belonging to two distinct species.

See REICHENOW, *Vögel Afrikas*, III. p. 842; NEUMANN, *Journal für Ornithologie*, 1906, pp. 270-274.

148. *Cisticola chiniana fischeri* Reichenow.

Journal für Ornithologie, 1891, pp. 162, 163. Lake Naivasha.

♂, ♂, ♂, Dec., Lucania.

♂, Nov., Athi River.

See NEUMANN, *Journal für Ornithologie*, 1906, p. 268; REICHENOW, *ibid*, p. 322.

149. *Cisticola prinoides* Neumann.

Journal für Ornithologie, 1900, p. 304. Mau, British East Africa.

♂, ♂, ♂, March, Molo.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 902,—its characters contrasted with *hunteri*, *neumanni* and *subruficapilla*, and its distribution.

150. *Cisticola terrestris* (Smith).

Drymoica terrestris Smith, *Illustrations of the Zoology of South Africa*, 1849, Aves, pl. 74. South Africa.

♀, March, Molo.

♀ in., Dec., Lucania.

1 adult without data.

This last specimen and the one that is immature are much paler than the one taken in March, which agrees quite well as to color with an example in this collection from South Africa.

See GRANT and REID, *Ibis*, 1901,—variation.

151. *Cisticola brunnescens* Heuglin.

Journal für Ornithologie, 1862, pp. 289, 290. North-east Africa.

♀, Oct., Nairobi.

♂, Jan., Kijabe.

These are *Cisticola hindii* Sharpe. Reichenow appears to be right in putting *hindii* in the synonymy of *brunnescens*,* as Heuglin's

**Vögel Afrikas*, III, p. 559.

description of *brunnescens* is practically the same as Sharpe's description of *hindii* as far as the latter goes, the former being the more complete. These specimens agree with those labelled *Cisticola hindii* in the Harrison collection in the Philadelphia Academy, which were kindly sent for examination.

See SHARPE, *Ibis*, 1900, p. 498,—seasonal variation (*C. hindii*).

152. *Bradypterus cinnamomeus salvadorii* (Neum.).

Bradypterus salvadorii Neumann, *Journal für Ornithologie*, 1900, p. 304. Mt. Gurui, German East Africa.

♀, Jan., Kijabe.

Without proper material for comparison there is some uncertainty as to whether this specimen is really *salvadorii* or true *cinnamomeus*, but the probabilities indicate the former to be the right name. Reichenow — *Vögel Afrikas*, III. p. 581 — puts *salvadorii* among the synonyms of *cinnamomeus*.

153. *Calamocichla parva* (Fisch. & Reichen.).

Phyllostrephus parvus Fischer & Reichenow, *Journal für Ornithologie*, 1884, p. 262. Lake Naivasha.

♂, Jan., Lake Naivasha.

154. *Calamonastes simplex* (Cab.).

Thamnobia simplex Cabanis, *Journal für Ornithologie*, 1878, pp. 205–221. Ndi, Teita, British East Africa.

♂, Apr., Voi.

155. *Philoscopus trochilus* (Linn.).

Motacilla trochilus Linnæus, *Systema Naturæ*, 10th ed. (1758) I. p. 188.

♂, March, Molo.

See SHARPE, *Ibis*, 1901, p. 53,—moult and color variation; ERLANGER, *Journal für Ornithologie*, 1905, p. 735,—variation.

156. *Euprinodes cinereus* Sharpe.

Ibis, 1891, p. 120. Mt. Elgon, British East Africa.

♂, Sept., Mt. Kenya.

157. *Euprinodes golzi* Finsch & Reichenow.

Journal für Ornithologie, 1884, p. 182. Great Arusha, German East Africa.

♂, Jan., Kijabe.

♀, Oct., Tana River.

See NEUMANN, *Journal für Ornithologie*, 1906, p. 278,—*golzi* held to be a subspecies of *Apalis flavida*.

158. *Sylvietta leucopsis* (Reichen.)

Sylviella leucopsis Reichenow, Ornithologisches Centralblatt, 1879, p. 114. Kibarakia, British East Africa.
♀, Apr., Voi.

159. *Eremomela flaviventris abdominalis* Reichenow.

Vögel Afrikas, III. (1905) p. 635. Kikuyu Country, British East Africa.
♀, Dec., Lucania.

160. *Eremomela scotops* Sundevall.

Oefversigt af Kongliga Vetenskaps Academiens Förhandlingar (Stockholm) 1850, p. 103. Kaffraria, South Africa.
♂, Oct., Tana River.

This specimen appears to extend the distribution of *scotops*, as heretofore recorded, somewhat to the northward.

161. *Camaroptera griseoviridis* (von Müll.).

Drymoica griseoviridis von Müller, Naumannia, I. Heft 4 (1851) p. 27.
♂, ♀, Jan., Kijabe.

162. *Prinia mystacea* Rüppell.

Neue Wirbelthiere zu der Fauna von Abyssinien, Vögel, 1835, p. 110. Gondar, Abyssinia.
♂, Jan., Kijabe.
♀, May, ♀, Nov., Nairobi.

Family **Prinonopidae.**

163. *Eurocephalus rüppelli* Bonaparte.

Revue et Magasin de Zoologie, 1853, p. 440. White Nile, Shoa, Abyssinia.
♂, ♀, Apr., Voi.
♂, Oct., Tana River.

164. *Prionops poliophus* Fischer & Reichenow.

Journal für Ornithologie, 1884, p. 180. Lake Naivasha, British East Africa.
?, ?, ♂, ♂, ♀, ♀, Jan., Kijabe.
"Occur in dense flocks and are very noisy."

165. *Sigmodus retzii graculinus* (Cab.).

Prionops graculinus Cabanis, Journal für Ornithologie, 1868, p. 412, pl. 3. Mombasa, British East Africa.

♂, ♀, ♀, Apr., Voi.

Family **Laniidae.**

166. *Lanius excubitorius* Prévot & Des Murs.

Lefebvre Voyage en Abyssinie, Zoologie, VI. (1850), p. 99. Abyssinia.

♂, ♀, Feb., Lake Elmenteita.

The wing measurements of these specimens are 107 mm. and 109 mm., respectively. The upper tail-coverts are pale gray, nearly white. The black bar on the outer rectrix of the male is 31 mm. wide, and of the female 22 mm. It thus appears that these birds are intermediates between *excubitorius* and *bæhmi*, but their small size rules them out of Neumann's *intercedens* — "Flugellänge 116-124 mm."*

167. *Lanius caudatus* Cabanis.

Journal für Ornithologie, 1868, p. 412, Mombasa, British East Africa.

♀, Nov., Athi River.

♀, Apr., Voi.

♂ im., Dec., Lucania.

The immature specimen has the crown, nape, rump and upper tail coverts still in juvenile dress. The breast and flanks show numerous obsolete bars.

See SCHIEBEL, *Journal für Ornithologie*, 1906, p. 174, — distribution.

168. *Lanius collaris humeralis* (Stanley)

Lanius humeralis Stanley, Salt's Travels, Appendix, 1814, p. 51. Abyssinia.

♂, ♂, ♂, ♀, ♀ juv., ♀ juv., ? juv., Jan., Kijabe.

♀, ♀, ♀, Dec., Lucania.

♀, ♀, ♂ im., Oct., ♀, ♀ im., Nov., Nairobi.

♀ Feb., Lake Elmenteita.

* J. f. O. 1905, pp. 228, 229.

The young birds range from one with a tail only 51 mm. long, taken at Kijabe, January 10, to others fully grown and largely out of their juvenile dress.

See SCHIEBEL, *Journal für Ornithologie*, 1906, p. 186,— distribution.

169. *Laniarius funebris* (Hartl.)

Dryoscopus funebris Hartlaub, Proceedings of the Zoological Society of London, 1863, p. 105. Mininga, German East Africa.

♂, Apr., Voi.

170. *Laniarius cubla hamatus* (Hartl.)

Dryoscopus hamatus Hartlaub, Proceedings of the Zoological Society of London, 1863, p. 106. Kazeh, Victoria Nyanza, German East Africa.

♂, ♂, Jan., Kijabe.

♂, Apr., Voi.

The specimen from Voi is smaller than those from Kijabe, as may be seen in the following measurements:

♂, Voi, Apr. 14, wing, 77 mm.; tail, 66 mm.; culmen, 17 mm.

♂, Kijabe, Jan. 2, " 83 " " 71 " " 19.5 "

♂, " Jan. 3, " 83 " " 70 " " 20 "

They are all alike in color characters.

171. *Laniarius æthiopicus* (Gm.)

Turdus æthiopicus Gmelin, Systema Naturæ, I. (1788) p. 824. Abyssinia.

♂, Oct., ♀, Nov., Nairobi.

♀, ♀, ♀, Jan., Kijabe.

♀, Nov., Athi River.

♀, Feb., Lake Elmenteita.

♀, Jan., Naivasha.

This series shows considerable variation. The male from Nairobi has no white on rectrices or secondaries. It appears to be an adult in fresh plumage. The female from Nairobi has the tip of the outer rectrices buffy white, but no white on the secondaries. The female from Naivasha, which was fully adult, is rather blacker, more glossy than the last, yet her outer rectrices have the distal two-thirds of the outer web and nearly half of the inner web white, as seen from beneath, and two secondaries of each wing are bordered with white for their full length. Three have the outer rectrices white at the

tip only, and four have white on the outer web for at least a third of its length. The under parts of the body do not vary materially. The two from Nairobi, the one from Athi River, the one from Lake Elmenteita and one of those from Kijabe lack white secondaries, while the other three have them. Of the females having no white on the secondaries, the wing measurement runs from 87 mm. to 93 mm.; while of those of the same sex having secondaries edged with white, the same measurement runs from 90 mm. to 94 mm.

The description of *athiopicus*, based on specimens from Abyssinia, in Vol. VIII, Catalogue of the Birds in the British Museum, states that all the quills are black, though a female from Anseba has the "outer web of one of the secondaries on the right wing very faintly edged with white." These birds with black secondaries are from the type region of the species, Abyssinia. Madarász described his *L. ambiguus** as similar to *L. athiopicus*, but differing from the latter in having no white on the secondaries. The dimensions of *ambiguus* as given are practically identical with those of the Abyssinian birds in the British Museum, so *ambiguus*, agreeing with *athiopicus* in lacking white on the secondaries as well as in size, has no distinctive character to support its existence and must fall into synonymy. The individual variation exhibited in this series of specimens evidently extends in some degree to the birds in Abyssinia and elsewhere, and has proven a stumbling block to various authors. The following citations give a clew to the efforts that have been made to confine by nomenclatural bonds this obstreperous species:

HARTERT, *Novitates Zoologicae*, 1902, p. 622; NEUMANN, *Journal für Ornithologie*, 1899, pp. 406, 407; *ibid.* 1900 pp. 270, 271; *ibid.* 1905, pp. 222, 223; ERLANGER, *ibid.* 1905, pp. 697, 698; REICHENOW, *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten*, X. (1893) Hamburg, pp. 19-21, — (*Dryoscopus major*).

172. *Laniarius abbotti* Richmond.

Auk, 1897, p. 161. Mt. Kilimanjaro, German East Africa.

♂, ♂, Sept., Mt. Kenya.

See SHARPE, *Proceedings of the Zoological Society*, London, 1900, pp. 605, 606, — distribution.

173. *Pomatorhynchus senegalus orientalis* (Cab.).

Pomatorhynchus orientalis Cabanis, Von der Decken's Reisen, III. (1869) p. 27. Mombasa, British Africa.

* *Annales Historico Naturalis Musei Nationalis Hungarici*, 1904, p. 205.

♀, Oct., Tana River.

♂, Apr., Voi.

These specimens have a wing measurement of 83 mm. They do not differ materially in color.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1906, pp. 810, 811,—characters and distribution of subspecies; NEUMANN, *Journal für Ornithologie*, 1907, pp. 376, 377,—characters and distribution.

174. *Pomatorhynchus australis dohertyi* (Neum.).

Telophonus australis dohertyi Neumann, *Journal für Ornithologie*, 1907, pp. 370, 371. Escarpment, British East Africa.

♂, ♂, ♀, Jan., Kijabe.

♂, ♀, Feb., Lake Elmenteita.

The Kijabe specimens were taken within a few miles of the type locality of this subspecies. The pair from Lake Elmenteita agree with those from Kijabe in size, but are browner, the back being nearly vandyke brown. The Kijabe birds are all sepia on the interscapulum. Neglecting a badly abraded specimen from Kijabe, the wing measurements of this series are between 74 and 78 mm.

Family **Paridae.**

175. *Parus albiventris* Shelley.

Ibis, 1881, p. 116. Ugogo, German East Africa.

♀, Oct., Tana River.

♀, Jan., Kijabe.

176. *Anthoscopus sylviella* Reichenow.

Ornithologische Monatsberichte, 1904, p. 27. Usegua, German East Africa.

♀, Oct., Tana River.

Family **Zosteropidae.**

177. *Zosterops kikuyuensis* (Sharpe).

Ibis, 1891, p. 444, pl. 12. Kikuyu, British East Africa.

♂, ♂, Sept., Mt. Kenya.

178. *Zosterops jacksoni*, Neumann.

Ornithologische Monatsberichte, 1899, p. 23. Mau Plateau, British East Africa.

♂, March, Molo.

See SHARPE, *Ibis*, 1899, p. 638,—attests validity.

Family **Nectarinidae.**

179. *Drepanorhynchus reichenowi* Fischer.

Journal für Ornithologie, 1884, p. 56. Lake Naivasha, British East Africa.

♂, ♂, ♂, ♂, ♂, ♂, ♂, ♀, ♀, March, Molo.

♂, ♂, ♂, ♀, ♀, Jan., ♂, ♂, June, Kijabe.

♂, no data.

See SHARPE, *Ibis*, 1891, p. 590,—color variation; id. *Proceedings of the Zoological Society*, London, 1900, pp. 602, 603,—variation; OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 931,—a generic character.

180. *Nectarinia kilimensis* Shelley.

Proceedings of the Zoological Society, London, 1884, p. 555. Mt. Kilimanjaro, German East Africa.

♂, ♂, ♀, Oct., ♂, ♂, ♂, ♂, Nov., Nairobi.

♂, ♂, ♂, ♀, Dec., Lucania.

♂, ♀, Jan., Naivasha.

♀, Nov., Athi River.

♂, June, Kijabe.

There is great variation in the glistening areas of these males, the bronze varying in tone from green to purple in different individuals.

See NEUMANN, *Journal für Ornithologie*, 1900, p. 300,—variation.

181. *Nectarinia tacazze* (Stanl.).

Certhia tacazze Stanley, Salt's Travels in Abyssinia, Appendix, 1814, LVIII. Abyssinia.

♂, ♂, ♂, ♂, March, Molo.

See SHARPE, *Ibis*, 1899, p. 631,—color variations (*Nectarinia jacksoni* Neumann); NEUMANN, *Journal für Ornithologie*, 1906, pp. 257, 258,—variation and subspecies.

182. *Cinnyris venusta falkensteini* (Fisch. & Reichen.)

Cinnyris falkensteini Fischer & Reichenow, Journal für Ornithologie, 1884, p. 56. Lake Naivasha, British East Africa.

♂, ♂, ♂, ♂, ♀, ♂ im., Dec., Lucania.

♂, ♂, ♂, ♂, ♀, Jan., Kijabe.

♂ im., Feb., Lake Elmenteita.

♂, no data.

See SHARPE, *Ibis*, 1900. pp. 495-497,—characters and relationships; OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 928,—relations of *venusta*, *affinis* and *falkensteini*.

183. *Cinnyris senegalensis æquatorialis* (Reich.).

Cinnyris æquatorialis Reichenow, Ornithologische Monatsberichte 1899, p. 171. Victoria Nyanza.

♂, ♀, Dec., Lucania.

See NEUMANN, *Journal für Ornithologie*, 1906, pp. 252-256,—subspecies of *senegalensis*.

184. *Cinnyris mediocris* Shelley.

Proceedings of the Zoological Society, London, 1885, p. 228. Mt. Kilimanjaro.

♂, ♂, ♂, ♂, ♀, Jan., Kijabe.

♂, ♂, ♂, ♀, ♀, March, Molo.

185. *Cinnyris kirkii* Shelley.

Monograph of the Nectariniidæ, 1876-1880, p. 73. Zambesi River near mouth of Shiré River, Portuguese East Africa.

♂, ♀, June, Kijabe.

♂, no data.

Family **Motacillidæ.**

186. *Motacilla vidua* Sundevall.

Oefversigt af Kongliga Vetenskaps Academiens Förhandlingar (Stockholm) 1850, p. 128. Kaffirland, South Africa.

♂, ♂, ♀, Nov., Athi River.

187. *Budytes campestris* (Pallas).

Motacilla campestris Pallas, Reise durch verschiedene Provinzen des Russischen Reiches, III. (1776) p. 696.

♂, ♂, ♂, ♀, Oct., ♂, ♀, Nov., Nairobi.

♂, March, Molo.

♀, Nov., Athi River.

188. *Anthus trivialis* (Linn.).

Alauda trivialis Linnæus, *Systema Naturæ*, 10th ed. (1758) p. 166.

♂, Jan., Kijabe.

189. *Anthus rufulus cinnamomeus* (Rüpp.).

Anthus cinnamomeus Rüppell, *Neue Wirbelthiere zu der Fauna von Abyssinien*, Vögel, I. (1835) p. 103. Abyssinia.

♂, Dec., Lucania.

See HARTERT, *Novitates Zoologicæ*, 1900, p. 45,— same designation as above; NEUMANN, *Journal für Ornithologie*, 1906, pp. 231, 232,— subspecies and their distribution, unites the forms from East Africa and South Africa under *A. r. raalteni* Bp.

190. *Anthus nicholsoni* Sharpe.

Layard's Birds of South Africa, 1884, p. 536.

♀, ♀, Jan., Kijabe.

♂, ♀, Dec., Lucania.

See NEUMANN, *Ornithologische Monatsberichte*, 1905, p. 77,— description of *A. n. longirostris*, which if valid, should apply to these specimens; id. *Journal für Ornithologie*, 1906, pp. 232-234,— subspecies of *nicholsoni*; REICHENOW, *Vögel Afrikas*, III. p. 839, *longirostris* = *nicholsoni*; ERLANGER, *Journal für Ornithologie*, 1907, p. 37,— mentions *longirostris*, but does not employ it.

Family **Alaudidæ.**

191. *Macronyx croceus* (Vieill.).

Alauda crocea Vieillot, *Nouveau Dictionnaire d'Histoire Naturelle*, I. (1816) p. 365.

♂, ♂, ♂, ♀, Oct., Nairobi.

♂, Dec., Lucania.

See SHARPE, *Ibis*, 1891, pp. 589, 590,— slightly smaller than South African examples.

192. *Mirafrā africanoides* Smith.

Report of the Expedition for Exploring Central Africa, 1836, p. 47. Orange River District, South Africa.

♂, Dec., Lucania.

193. *Mirafra africana athi* Hartert.

Novitates Zoologicae, 1900, p. 46. Athi Plain, British East Africa.

♂ juv., Oct., Nairobi.

♀ im. Dec., Lucania.

See SHARPE, *Ibis*, 1899, p. 624, 625,—color variations; id. *ibid.* 1891, p. 260,—local variation noted.

194. *Tephrocorys cinerea saturator* (Reichenow).

Calandrella cinerea saturator Reichenow, Vögel Afrikas, III. (1904) p. 378. East Africa, Angola.

♂, Nov., Nairobi.

See SHARPE, *Ibis*, 1891, p. 260,—local variation of *cinerea*.

Family **Fringillidae.**

195. *Crithagra albifrons* Sharpe.

Ibis, 1891, p. 118. Sotik, Kikuyu, British East Africa.

♀ im. March, Molo.

See SHARPE, *Ibis*, 1899, p. 622,—age variation; id. *Ibis*, 1891, pp. 255, 256,—full description of adult male; OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 935,—generic characters.

196. *Crithagra striolata* (Rüpp.).

Pyrhula striolata Rüppell, Neue Wirbelthiere zu der Fauna von Abyssinien, Vögel, 1835, p. 99. Abyssinia.

♂, March, Molo.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, p. 935,—geographical variation.

197. *Serinus flavivertex* (Blanf.).

Crithagra flavivertex Blanford, Annals and Magazine of Natural History, 4th series VI, (1869) p. 330. Abyssinia.

♂, ♀, Jan., Kijabe.

198. *Serinus reichenowi* Salvadori.

Annali Museo Civico di Storia Natural de Genova, 1888, p. 272. Cialalaka, Shoa.

♀, Dec., Lucania.

See GRANT, *Ibis*, 1900, p. 136,—distinctive characters.

199. *Serinus sharpii* Neumann.

Journal für Ornithologie, 1900, pp. 287, 288. Mt. Kilimanjaro.
♀, Dec., Lucania.

200. *Passer rufocinctus* Fischer & Reichenow.

Journal für Ornithologie, 1884, p. 55. Lake Naivasha.

♂, ♀, Oct., ♂, ♀, Dec., Lucania.

♂, ♂, March, Gilgil.

♂, Jan., Naivasha.

See HARTERT, *Novitates Zoologicae*, 1900, p. 42,—*Passer moti-*
tensis rufocinctus.

201. *Petronia pyrgita* (Heugl.).

Xanthodina pyrgita Heuglin, Journal für Ornithologie, 1862, p. 30.
Abyssinia.

♂, Oct., Tana River.

This specimen is darker and larger than specimens in this Museum
from Somaliland. Wing 87 mm.

202. *Emberiza flaviventris* Stephens.

Shaw's General Zoology, IX, pt. 2, (1815) p. 374. South Africa.

♀, ♀, Jan., Kijabe.

See SHARPE, *Ibis*, 1891, p. 259,—A large gray-flanked specimen;
NEUMANN, *Journal für Ornithologie*, 1905, p. 359,—African forms of
yellow-breasted sparrows.

Family **Ploceidæ**.

203. *Diatropura procne delamerei* (Shelley).

Coliuspasser delamerei Shelley, Bulletin of the British Ornitholo-
gist's Club, XIII, (1903) p. 73. North Kenya, British East Africa.

♂, ♂, ♂, ♂, Jan., Naivasha.

"The males were constantly dancing. Their long tails retarded
their movements, and often caused them to turn in the air, facing
the wind, in spite of their desire to go in some other direction. The
females were exceedingly active, and far outnumbered the males."

204. *Drepanoplectes jacksoni* Sharpe.

Ibis, 1891, p. 246. Masailand, British East Africa.

♂, ♂, ♂, ♂, ♂, ♀, Jan., Naivasha.

♂, ♂, ♂, ♂, ♂, ♀, Nov., Nairobi.

♂, ♀, Dec., Lucania.

The males in this series represent a variety of conditions of plumage, from the female dress to that of the adult male.

205. *Coliuspasser laticaudus* (Licht.).

Fringilla laticauda Lichtenstein, Verzeichniss der Doubletten des Zoologischen Museums der Universität zu Berlin, 1823, p. 24. Nubia.

♂, ♂, ♂, ♂, ♂, ♂, Nov., Nairobi.

♂, Sept., Mt. Kenya.

206. *Coliuspasser eques* (Hartl.).

Vidua eques Hartlaub, Proceedings of the Zoological Society, London, 1863, p. 106, pl. 15. Unyamwezi Country, German East Africa.

♂, ♀, ♀, Nov., Tana River.

See GRANT and REID, *Ibis*, 1901, p. 614,—seasonal plumages.

207. *Hyperanthus capensis xanthomelas* (Rüpp.).

Euplectes xanthomelas Rüppell, Neue Wirbelthiere zur der Fauna von Abyssinien, Vögel, 1835, p. 94. Abyssinia.

♂, ♂, ♂, ♂, ♂, ♀, ♀, ♀, ♀, ♀, Jan., Kijabe.

♂, ♂, ♂, Feb., Lake Elmenteita.

♂, Nov., Tana River.

♂, Jan., Naivasha.

208. *Vidua macroura* (Pall.).

Fringilla macroura Palla, Vroeg's Catalogue, 1764, p. 3.

♂, ♂, ♂, Dec., Lucania.

♂, ♂, ♂, Apr., Voi.

209. *Hyphantornis spekei* Heuglin.

Petermann, Mitteilungen aus Justus Perthes' Geographischer Anstalt, 1861, p. 24. Northern Somaliland.

♂, ♂, ♂, ♂, Oct., Nairobi.

♂, Jan., Naivasha.

♂, Nov., Athi River.

210. *Heterhyphantes reichenowi* (Fisch.).

Sycobrotus reichenowi Fischer, Journal für Ornithologie, 1884, pp. 180, 181. Lake Naivasha, British East Africa.

♂, ♂, ♀, ♀, ♀, Nov., Tana River.

♂, ♂, ♀, Jan., Naivasha.

♂, ♂, Jan., Kijabe.

♂, ♀, March, Molo.

♂, Nov., Nairobi.

No seasonal change in plumage is apparent in this series. A male taken in March is still in immature plumage, with crown olive-green. A November male and a January female are passing from the immature phase to an intermediate condition, having the crown nearly black and the back with black predominating, the feathers being margined with olive-green. It may be that one of these two latter specimens is wrongly sexed and that both are females. The absence of orange on the forehead suggests this view. It seems probable that fully adult plumage is not attained under two years of age.

See SHARPE, *Ibis*, 1899, p. 612, — plumages; id. *Ibis*, 1891, pp. 252, 253, — description of immature male.

211. *Hyphantornis cabanisi* Peters.

Journal für Ornithologie, 1868, p. 133. Inhambane, Portuguese East Africa.

♀, Nov., Athi River.

Through the kindness of the authorities at the U. S. National Museum this specimen was compared with one from Taveita, taken in April (No. 118294, U. S. N. M.). The two agree in dimensions. The Athi River bird is grayer on the interscapulum, and has the yellow of the under parts paler and less extensive, this color not reaching the lower breast. These differences may be due to immaturity in our specimen.

212. *Sitagra ocularia abayensis* Neumann.

Journal für Ornithologie, 1905, p. 339. Lake Abaya, southern Abyssinia.

♂, Sept., Mt. Kenya.

This bird has been compared with another of the same sex from Taveita,* British East Africa, and differs from it in being generally darker. The Taveita specimen has the tail decidedly brown above and the breast and sides are yellow, while this from Kenya has the tail and sides olive-green, the yellow of the under parts being confined to a strip down the middle of the breast. Now the differences here indicated are in accordance, partially at least, with Neumann's diagnoses of his new subspecies *abayensis* and *suahelicus*, and the former name seems to be applicable to this specimen, while the latter will probably apply to the one from Taveita.

* No. 118297 U. S. National Museum.

213. *Plocepasser melanorhynchus* Rüppell.

Systematische Uebersicht der Vögel Nord-Ost-Afrika's, 1845,
p. 78. Shoa.
♀, Oct., Tana River.

214. *Pyromelana nigroventris* (Cass.).

Euplectes nigroventris Cassin, Proceedings of the Academy of
Natural Sciences of Philadelphia, 1848, p. 66. Zanzibar.
♂, ♀, Apr., Voi.
"Nests in communities in reeds."

215. *Quelea sanguinirostris æthiopica* (Sund.).

Ploceus sanguinirostris var. *æthiopica* Sundevall, Oefversigt af
Kongliga Vetenskaps Academiens Förhandlingar (Stockholm) 1850,
p. 126. Senaar, Egyptian Sudan.
♀, ♀, March, Gilgil.
♀, Dec., Lucania.

These specimens agree well with others in this Museum from
Somaliland.

216. *Hypargos niveoguttatus* (Peters).

Spermophaga niveoguttata Peters, Journal für Ornithologie, 1868,
p. 133. Inhambane, Portuguese East Africa.
♂, Apr., Voi.

The back of this specimen, which is apparently an adult, is near
to mummy brown, and the crown and nape are olive. In these par-
ticulars it does not seem to quite agree with Sharpe's description
in Catalogue of Birds in British Museum, Vol. XIII, page 274, wherein
the back is said to be "warm chocolate-brown; crown, dark ashly."

See OBERHOLSER, *Proceedings National Museum*, Washington,
1905, p. 882,— various plumages.

217. *Granatina ianthinogaster* (Reich.).

Uræginthus ianthinogaster Reichenow, Ornithologisches Central-
blatt, IV. (1879) p. 114, pl. 11. Masailand, East Africa.
♂, Dec., Lucania.

♀, Feb., Gilgil.

"Iris of male red; female, orange."

See OBERHOLSER, *Proceedings National Museum*, Washington,
1905, p. 879,— description of immature plumage.

218. *Coccopygia kilimensis* Sharpe.

Catalogue of the Birds in the British Museum, XIII. (1890)
p. 307. Mt. Kilimanjaro district, East Africa.

♂, Jan., Kijabe.

219. *Lepidopygia nigriceps* (Cass.).

Spermestes nigriceps Cassin, Proceedings of the Academy of
Natural Sciences of Philadelphia, 1852, p. 185. Zanzibar.

♂, ♀, May, Nairobi.

1 specimen without data.

See OBERHOLSER, *Proceedings National Museum*, Washington,
1905, pp. 882, 883,— characters of *Lepidopygia*.

220. *Estrilda astrild minor* (Cab.).

Habropygia minor Cabanis, Journal für Ornithologie, 1878, p. 229.
Voi River, British East Africa.

♂, ♂, ♂, ♂, ♂, ♀, Nov., Nairobi.

221. *Estrilda rhodopygia* Sundevall.

Oefversigt af Kongliga Vetenskaps Academiens Förhandlingar
(Stockholm) 1850, p. 126. East Africa.

♂, ♂, ♀, Dec., Lucania.

Family **Oriolidae.**

222. *Oriolus oriolus* (Linn.).

Coracias oriolus Linnæus, Systema Naturæ, 10th ed. 1. (1758)
p. 107.

♀, Oct., Tana River.

223. *Oriolus larvatus rolleti* (Salvad.).

Oriolus rolleti Salvadori, Atti della Società Italiana, Milan, VII.
(1864) p. 161. White Nile.

?, ♂, ♂, ♀, Jan., Kijabe.

♀, ♀, ♀, Nov., Athi River.

♂, ♀, Apr., Voi.

The wing of the largest is 134 mm. A female in fresh plumage has
the wing 119 mm. The average wing measurement of the males is
131 mm., and of the females is 122 mm.

See HARTERT, *Novitates Zoologicae*, 1900, p. 38,—geographical variation; NEUMANN, *Journal für Ornithologie*, 1900, p. 278,—geographical variation; id. *ibid.*, 1905, pp. 234-236,—subspecies, characters and distribution.

Family **Dicruridae**.

224. *Dicrurus adsimilis divaricatus* (Licht.).

Muscicapa divaricata Lichtenstein, Verzeichniss der Doubletten, Zoologische Museum, Berlin, 1823, p. 52. Senegambia, West Africa.
♂, Oct., Tana River.

See OBERHOLSER, *Proceedings National Museum*, Washington, 1905, pp. 918-920,—characters and distribution of subspecies.

Family **Sturnidae**.

225. *Lamprocolius chalybæus sycobius* (Hartl.).

Lamprocolius sycobius Hartlaub, Journal für Ornithologie, 1859, p. 19, Mozamibque.

♂, ♀, Oct., ♂, Nov., Nairobi.

♀, Jan., Naivasha.

♂, Jan., Kijabe.

♀, Oct., Tana River.

?, Apr., Voi.

226. *Spreo superbus* (Rüpp.).

Lamprotornis superbus Rüppell, Systematische Uebersicht der Vögel Nord-Ost-Afrika's, 1845, p. 65. Shoa, Abyssinia.

♀, ♀, ♀ im., ♀ im., Dec., Lucania.

♂, ♀, Jan., Naivasha.

227. *Amydrus morio rüppellii* (Verreaux).

Amydrus rüppellii Verreaux, Chenu, Encyclopedia d'Histoire Naturelle, V. (1856) p. 166. Abyssinia.

♂, ♂, ♂ im., ♂ im., ♂ im., ♀, ♀ im., Jan., Kijabe.

♂, Dec., Lucania.

Family **Corvidæ**.

228. *Corvultur albicollis* (Lath.).

Corvus albicollis Latham, Index Ornithologicus, I. (1790) p. 151.
Africa.

?, ♀, ♀, ♂, Jan., Kijabe.



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THE BIRDS OF THE LEEWARD ISLANDS, CARIBBEAN SEA

BY

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THE BIRDS OF THE LEEWARD ISLANDS, CARIBBEAN SEA.

INCLUDING THE ISLANDS OF

ARUBA, CURAÇAO, BONAIRE, ISLAS DE AVES, LOS ROQUES,
ORCHILLA, TORTUGA, BLANQUILLA, LOS HERMANOS,
TESTIGOS IS., AND MARGARITA.

BY CHARLES B. CORY.

In the spring of 1908 Mr. John F. Ferry and Dr. Ned Dearborn made a short visit to the islands of Aruba, Curaçao and Bonaire for the purpose of collecting zoological material for this Museum, Mr. Ferry devoting his time to Aruba and Bonaire, and Dr. Dearborn to Curaçao; and in January of the present year (1909) Mr. Ferry returned to Curaçao, where he chartered a schooner and made collections on the islands of Bonaire, Islas de Aves, Los Roques, Orchilla, Tortuga, Blanquilla, Los Hermanos, Testigos Is. and Margarita, the ornithological results of both of these expeditions being summarized in the present paper, together with a list of the species previously recorded from the islands by other writers.

ARUBA ISLAND.

The Island of Aruba or Oruba, as it is sometimes called, is 17 miles long and about 4 miles in width, and is situated 16 miles north of Cape San Roman, Venezuela, and 43 miles west of Curaçao. A large part of the island is low and barren, but there are two irregular and comparatively high hills in the interior. The vegetation is scattered and consists principally of cacti of several species and occasional groves of palms and tamarinds, while mangroves are common along the shores. Fruit trees of various species are cultivated in some localities, as is also the Dividivi-tree (*Libidibi coriacea*).

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1882. LAWRENCE, G. N. Descriptions of new Species of Birds of the Genera *Chrysotis*, *Formicivora* and *Spermophila*, Ann. N. Y. Acad. Sciences, Vol. II, 1883, p. 381. (Description of *Chrysotis canifrons* from Aruba.)

1888. MARTIN, K. Bericht über eine Reise nach Neiderländische Westindien, Leiden, 1888, p. 141. (Mentions several species of birds.)
1892. HARTERT, E. Bull. Brit. Orn. Club, No. iii, 1892, p. xii. (Description of *Myiarchus brevipennis*.)
1892. HARTERT, E. Bull. Brit. Orn. Club, No. iv, 1892, p. xvi. (Description of *Conurus arubensis*.)
1893. HARTERT, E. On the Birds of the Islands of Aruba, Curaçao and Bonaire. Ibis, 1893, p. 289.
1902. HARTERT, E. Die mit Sicherheit festgestellten Vögel der Inseln Aruba, Curaçao und Bonaire. Novitates Zoologicae, Vol. IX, 1902, pp. 295-309.

BIRDS OF ARUBA.

Mr. Ferry remained on Aruba from April 22 until May 16, 1908.

Family Laridae.

Larus atricilla Linn.

Not taken by Mr. Ferry but observed on several occasions; also recorded by Hartert. (Ibis, 1893, p. 311.)

Phaethusa magnirostris (Licht.).

A single male specimen taken May 12, 1908. It has not previously been recorded from the island.

Sterna maxima Bodd.

5 specimens taken, 3 males, 2 females. It was not uncommon.

Sterna eurygnatha Saunders.

1 specimen taken, a male. Although recorded from Margarita, it has not previously been taken here.

Sterna hirundo Linn.

1 specimen taken, others seen. Mr. Hartert (Ibis, 1893, p. 309) states that his specimens agree with *S. hirundo* but "are smaller and the bill somewhat less pointed." In the specimen before me the difference, if any, is very slight.

***Sterna dougalli* Montag.**

Mr. Hartert states that he found this species breeding on the coral reef on the coast of Aruba (Ibis, 1893, p. 310). Judging from the color of the bill and feet, as Mr. Hartert suggests, these birds may be *S. d. gracilis* Cory. It was not taken by Mr. Ferry.

***Sterna antillarum* (Less.).**

3 specimens taken; common. Mr. Hartert found it breeding and saw young birds in July.

***Sterna fuliginosa* Gmel.**

1 specimen, an adult male, taken early in May.

***Sterna anæthetus* Scop.**

Mr. Ferry did not procure this species, but Mr. Hartert found it breeding in some numbers on Aruba the latter part of June.

Family Phalacrocoracidae.***Phalacrocorax vigua* (Vieill.).**

Phalacrocorax brasiliensis Hartert, Novitates Zoologicae, 1902, p. 308.

1 specimen taken by Mr. Ferry, others seen. Mr. Hartert found it abundant "but difficult to approach." (Ibis, 1893, p. 308.)

Family Pelecanidae.***Pelecanus occidentalis* Linn.**

Pelecanus fuscus Hartert, Ibis, 1893, p. 308.

1 specimen taken; common.

Family Fregatidae.***Fregata aquila* (Linn.).**

1 specimen taken, an adult male; rather common.

Family Phoenicopteridae.***Phoenicopterus ruber* Linn.**

According to Hartert (Ibis, 1893, p. 307) a Flamingo was seen and shot by Dr. Cole. As *P. ruber* is not uncommon on Los Roques and has been recorded from Bonaire, it was probably this species.

Family **Plataleidae.**

Ajaia ajaia (Linn.).

1 specimen taken, a female. Apparently not previously recorded from these islands. Mr. Ferry also took a specimen on Margarita.

Family **Ardeidae.**

Egretta candidissima (Gmel.).

Recorded by Mr. Hartert as having been seen on Aruba and Bonaire; not observed by Mr. Ferry.

Hydranassa tricolor Müll.

Given by Hartert as occurring on Aruba, who states, "Not plentiful but of regular occurrence on Aruba and Bonaire. Identical with South American specimens but different from the Mexican subspecies, which is spread over the West Indies." (Ibis, 1893, p. 307.) Its *regular* occurrence on Aruba is surprising, as all specimens which I have examined from the islands (including Margarita and Trinidad) are *H. t. ruficollis*.

Hydranassa tricolor ruficollis (Gosse).

Mr. Ferry procured four specimens on Aruba and others on Margarita, all of which agree very well with specimens from the West Indies and are readily distinguished from specimens of *H. tricolor* from British Guiana and Brazil.

Florida cærulea (Linn.).

One adult specimen taken by Mr. Ferry.

Butorides virescens robinsoni (Richmond).

Two specimens taken, which I refer provisionally to this form, as they approach nearer to it than to *virescens*. Hartert refers his Aruba specimens to *B. virescens* (Ibis, 1893, p. 307) and suggests it is probably the bird called *B. striata* by Peters (J. f. O., 1892, p. 121).

This group of Herons is decidedly in need of careful revision.

Family **Scolopacidae.**

Pisobia maculata (Vieill.).

3 specimens, 1 ♂, 2 ♀.

Pisobia minutilla (*Vieill.*).

5 specimens, 1 ♂, 4 ♀.

Ereunetes pusillus (*Linn.*).

3 specimens, 2 ♂, 1 ♀.

Calidris leucophæa (*Pallas*).

Calidris arenaria of authors.

1 ♂, others seen.

Totanus melanoleucus (*Gmel.*).

3 specimens, all males.

Totanus flavipes (*Gmel.*).

1 specimen, ♂.

Actitis macularia (*Linn.*).

1 specimen, ♂.

Family **Charadriidæ.**

Squatarola squatarola (*Linn.*).

4 specimens, 2 ♂, 2 ♀.

Ægialitis semipalmata *Bonap.*

5 specimens, 3 ♂, 2 ♀.

Ochthodromus wilsonius rufinuchus (*Ridgw.*).

9 specimens, 7 ♂, 2 ♀.

Family **Aphrizidæ.**

Arenaria interpres morinella (*Linn.*).

7 specimens, 4 ♂, 3 ♀.

Family **Hæmatopodidæ.**

Hæmatopus palliatus *Temm.*

1 specimen, ♂; others seen.

Family **Odontophoridae**.

Eupsychortyx cristatus (Linn.).

13 specimens, 6 ♂, 7 ♀.

The rufous color on the belly varies in intensity in different specimens, being only faintly indicated in some females; the latter also lack the black stripes above and below the ear coverts. Apparently occurs only on the islands of Aruba and Curaçao.

Family **Columbidae**.

Columba gymnophthalma Temm.

♂ taken May 11, 1908; not uncommon in some localities.

Leptotila verreauxi (Bonap.).

3 specimens taken, 2 ♂, 1 ♀; not uncommon.

Zenaida vinaceo-rufa Ridgw.

3 specimens, all males; common.

Chæmepelia passerina perpallida (Hartert).

14 specimens, 4 ♂, 10 ♀; common.

Family **Falconidae**.

Buteo albicaudatus colonus Berlep.

A bird supposed to be this subspecies was seen by Mr. Hartert (Ibis, 1893, p. 304). It was not taken by Mr. Ferry.

Falco sparverius brevipennis (Berlep.).

4 specimens, 2 ♂, 2 ♀.

The characters given by Berlepsch as distinguishing this subspecies seem fairly constant in birds from this island. The type is from Curaçao.

Polyborus cheriway (Jacq.).

1 specimen taken by Mr. Ferry.

Family **Strigidae**.**Speotyto cunicularia** (Mol.).

5 specimens, 2 ♂, 3 ♀.

The specimens from Aruba apparently belong to this species. They are somewhat darker and browner than *S. brachyptera* from Margarita, and the inner bars on the outer web of the first primary are not connected as in birds from that island. The under wing coverts are unmarked. The measurements of the five Aruba specimens are as follows:

Wing,	6.	;	tail,	2.80;	tarsus,	1.75.
"	6.	;	"	3.	;	" 1.70.
"	6.15;	"	2.95;	"		1.75.
"	6.30;	"	3.	;	"	1.75.
"	6.15;	"	2.80;	"		1.73.

Family **Psittacidae**.**Amazona ochroptera** (Gmel.).

Although this handsome Parrot is not uncommon in some parts of the island, it is shy. Mr. Ferry procured but one specimen, an adult female; others were seen.

Conurus æruginosus arubensis (Hartert).

Conurus arubensis Hartert, Bull. Brit. Orn. Club. No. iv, 1892, p. xvi.

8 specimens, 3 ♂, 5 ♀.

Very similar to *C. æruginosus*, and it is doubtful if it is worthy of more than subspecific recognition. The color of the forehead and sides of the head appear to be subject to considerable variation.

Family **Cuculidae**.**Coccyzus minor** (Gmel.).

2 specimens, a male taken April 22, 1908, and a female taken May 4.

Coccyzus americanus (Linn.).

1 specimen, ♂, April 22.

Family **Trochilidae**.**Florisuga mellivora** (Linn.).

Mr. Ferry took a single specimen on Aruba, an immature male beginning to assume the blue throat and which I refer provisionally to this species. The back is slightly more golden green than in other specimens in approximate stage of plumage from northern South America, and there are other slight differences, but not of sufficient importance to characterize it as an insular form, especially in a single specimen. It is probably a straggler from the mainland and not resident, as it has not previously been recorded from the island.

Chrysolampis mosquitus (Linn.).

8 specimens, 6 ♂, 2 ♀; common.

Chlorostilbon caribæus Lawr.

7 specimens, 6 ♂, 1 ♀.

Family **Tyrannidae**.**Tyrannus dominicensis** (Gmel.).

3 specimens, 1 ♂, 2 ♀; common.

Tyrannus melancholicus satrapa (Cab. & Heine).

Mr. Ferry took a female specimen of this Flycatcher May 1, 1908. It has not previously been recorded from the island.

Myiarchus tyrannulus brevipennis (Hartert).

3 specimens, 1 ♂, 2 ♀.

Sublegatus glaber Scl. & Salv.

4 specimens, 2 ♂, 2 ♀.

Elænia martinica riisii (Sclater).

4 specimens, 2 ♂, 2 ♀.

Family **Icteridae**.**Icterus icterus ridgwayi** (Hartert).

Mr. Ferry procured two specimens of this fine Oriole, a male and a female, on Aruba, which agree in size of bill with birds from Margarita (see note regarding this form under Margarita). Mr. Hartert

bases this subspecies largely on the size of the bill and feet, as compared with specimens from Cumana, Venezuela, and the Orinoco region (Novitates Zoologicae, Vol. IX, 1902, p. 299). The measurements of the Aruba specimens are as follows:

♂ wing	4.30;	culmen	1.14;	depth of bill at nostril	.43.
♀ " "	4.20;	" "	1.08;	" " " "	.40.

Birds from St. Thomas approach much nearer this form and differ decidedly in color and size of bill from birds from the mainland. The St. Thomas birds must either be considered to be *ridgwayi* or a new form; they are certainly different from true *Icterus icterus*. The under parts, collar and rump are bright yellow, with only a trace of orange, not decidedly orange or reddish orange as in *icterus* and *ridgwayi*. The bill averages larger than in either, some specimens having the culmen 1.25. The middle of the outer webs of primaries (except the first and second) are narrowly but distinctly edged with white, while in both *icterus* and *ridgwayi* there is merely a trace, and in many specimens from the mainland it is entirely wanting. Should a larger series of specimens prove these differences to be constant, I propose that the St. Thomas bird be recognized as *Icterus icterus harterti*.

***Icterus xanthornus curasoensis* (Ridgw.).**

8 specimens, 1 ♂, 7 ♀.

***Dolichonyx oryzivorus* (Linn.).**

1 specimen, ♂, April 25, 1908.

Family **Fringillidae.**

***Spiza americana* (Gmel.).**

1 specimen, ♂, April 24, 1908.

***Brachyspiza capensis insularis* (Ridgw.).**

14 specimens, 10 ♂, 4 ♀; common.

***Tiaris sharpei* (Hartert).**

Euethia sharpei Hartert, Bull. Brit. Orn. Club, Vol. I, No. vii, 1893, p. xxxvii.

13 specimens, 8 ♂, 5 ♀; common.

Family **Cœrebidæ.**

Cœreba uropygialis *Berlep.*

14 specimens, 6 ♂, 8 ♀.

Family **Mniotiltidæ.**

Dendroica ruficapilla rufopileata *Ridgw.*

11 specimens, 8 ♂, 3 ♀.

Family **Mimidæ.**

Mimus gilvus rostratus *Ridgw*

9 specimens, 7 ♂. 2 ♀.

CURAÇAO ISLAND.

The Island of Curaçao is situated 43 miles east of Aruba. It is about 6 miles in width at its widest part. The central portion is high, rising from the coast in successive terraces, the highest part being known as San Cristoffel Mountain. It is situated in the northwestern portion of the island and has an elevation of 1255 feet.

The vegetation is similar to that of Aruba, although a considerable number of fruit orchards occur throughout the island. Dr. N. Dearborn's stay on Curaçao was limited to eight days, from March 24 to March 31, 1908, and nearly all of his specimens were taken about 12 miles west of the town of Willemstad in the western part of the island.

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BIRDS OF CURAÇAO.

Family **Laridae**.**Larus atricilla** Linn.

Recorded by Hartert (Ibis, 1893, p. 326).

Sterna maxima Bodd.

Recorded by Hartert (Ibis, 1893, p. 326).

Sterna hirundo Linn.

Hartert (Ibis, 1893, p. 326); not taken by Dearborn.

Family **Pelecanidae**.**Pelecanus occidentalis** Linn.

Pelecanus fuscus, Hartert, Ibis, 1893, p. 326.

Family **Fregatidae**.**Fregata aquila** (Linn.).

Hartert, Ibis, 1893, p. 326.

Family **Ardeidae**.

Ardea herodias *Linn.*

A bird of this species was taken by Messrs. Benedict and Nye on Curaçao. (Ridgway, Proc. U. S. Nat. Mus., 1884, p. 177.)

Egretta candidissima (*Gmel.*).

Hartert states: "White Herons are of irregular occurrence on Curaçao, and as I shot *A. candidissima* on Aruba, I suppose that they belong to this species." (Ibis, 1893, p. 325.)

Butorides virescens (*Linn.*).

Recorded by Hartert (Ibis, 1903, p. 325); not taken by Dearborn.

Family **Recurvirostridae**.

Himantopus mexicanus (*Müll.*).

Not taken by Dearborn. Hartert states, "Flocks of old and young of this Stilt were seen in June on the lagoon of Savonet." (Ibis, 1893, p. 325.)

Family **Scelopacidae**.

Helodromas solitarius (*Wils.*).

A male bird of this species was taken by Dr. Dearborn, March 25, 1908.

Actitis macularia (*Linn.*).

Recorded by Robinson and Hartert; not taken by Dearborn.

Family **Hæmatopodidae**.

Hæmatopus palliatus *Temm.*

Recorded by Hartert. (Ibis, 1893, p. 325.)

Family **Odontophoridae**.

Eupsychortyx cristatus (*Linn.*).

7 specimens, 4 ♂, 3 ♀.

Family **Columbidae**.**Columba gymnophthalma** *Temm.*

1 adult female taken; others seen. "Iris, orange brown; bill, pink; feet, red." (Dearborn.)

Zenaida vinaceo-rufa *Ridgw.*

5 specimens, 3 ♂, 2 ♀. "Iris, dark brown; bill, black; feet, red." (Dearborn.)

Chæmepelia passerina perpallida (*Hartert*).

7 specimens, 5 ♂, 2 ♀. "Iris, brown; bill, orange at base. dusky at tip; feet, red." (Dearborn.)

Family **Falconidae**.**Buteo albicaudatus colonus** *Berlep.*

Type from Curaçao. (Berlepsch, J. f. O., 1892, p. 91.) It was not taken by Dr. Dearborn.

Falco sparverius brevipennis (*Berlep.*).

12 specimens, 7 ♂, 5 ♀, in which the characters described by Berlepsch seem fairly constant. "Iris, dark brown; bill, horn-blue; feet, yellow." (Dearborn.) The measurements are as follows:

♂	wing,	6.50;	tail,	5.	; tarsus,	1.35
♂	"	6.50;	"	5.	; "	1.30
♂	"	6.45;	"	5.	; "	1.30
♂	"	6.55;	"	4.90;	"	1.35
♂	"	6.50;	"	5.	; "	1.30
♂	"	6.40;	"	4.90;	"	1.35
♂	"	6.60;	"	4.95;	"	1.38
♀	"	7.	; "	5.10;	"	1.30
♀	"	6.95;	"	5.20;	"	1.35
♀	"	7.	; "	5.10;	"	1.30
♀	"	7.10;	"	5.40;	"	1.40
♀	"	6.95;	"	5.25;	"	1.37

Polyborus cheriway (*Jacq.*).

Given by Hartert as "not rare" (Ibis, 1893, p. 321); not taken by Dearborn.

Family **Aluconidae.**

Aluco pratincola bargei (Hartert).

Strix flammea bargei Hartert, Bull. Brit. Orn. Club, No. iii, 1892, p. xiii. *Id.* Ibis, 1893, p. 124.

Dr. Dearborn was unable to procure a specimen of this Owl. Mr. Hartert considers it "not very rare in some of the rocky parts of Curaçao" (Ibis, 1893, p. 322).

Family **Psittacidae.**

Conurus pertinax (Linn.).

8 specimens of this well-marked species were taken, 4 ♂, 4 ♀. It is found throughout the island; but is more common in the western part. Hartert states, "The nests are mostly built in the large ants'-nests placed in trees, into which they dig holes." (Ibis, 1893, p. 320.) Specimens from St. Thomas agree very well with birds from this island except in most cases the St. Thomas bird has the sides of the head slightly darker orange, and the outer webs of third and fourth primaries are as a rule more distinctly green.

So far as known, no species of *Amazona* occurs on Curaçao.

Family **Cuculidae.**

Crotophaga sulcirostris Swains.

2 specimens, both females.

Family **Caprimulgidae.**

Stenopsis cayennensis (Gmel.).

Dr. Dearborn did not find this species on Curaçao, but Mr. Hartert obtained a female and two young birds. (Ibis, 1893, p. 319.)

Family **Trochilidae.**

Chrysolampis mosquitus (Linn.).

1 specimen, ♂.

Chlorostilbon caribæus Lawr.

14 specimens, 6 ♂, 8 ♀.

Family **Tyrannidae.****Tyrannus dominicensis** (*Gmel.*).

7 specimens, 5 ♂, 2 ♀.

Tyrannus melancholicus satrapa (*Cab. & Heine*).

A female killed by Dr. Dearborn, March 1, 1908; not previously recorded from Curaçao.

Myiarchus tyrannulus brevipennis (*Hartert*).

Two specimens taken, a male and a female.

Sublegatus glaber *Scl. & Salv.*

Two specimens, both males; not rare.

Elænia martinica riisii (*Sclater*).

1 specimen, ♀. Although only one bird of this species was procured by Dr. Dearborn, it is apparently not uncommon on Curaçao, as both Mr. Hartert and Herr Peters obtained specimens.

Family **Icteridae.****Icterus icterus ridgwayi** (*Hartert*).

Xanthornus icterus ridgwayi Hartert, *Novitates Zoologicae*, Vol. IX, 1902, p. 299.

Seen on several occasions by Dr. Dearborn, but none was taken. Mr. Hartert found it "not numerous" and states that the colors of Curaçao specimens were very bright. (*Ibis*, 1893, p. 317.)

Icterus xanthornus curasoensis (*Ridgw.*).

7 specimens, 3 ♂, 4 ♀.

Family **Fringillidae.****Brachyspiza capensis insularis** *Ridgw.*

Zonotrichia pileata Berl., *Journ. für Orn.*, 1892, p. 82.

A good series of 21 specimens, 13 ♂, 8 ♀, were taken by Dr. Dearborn.

***Ammodramus savannarum caribæus* (Hartert).**

Coturniculus savannarum caribæus Hartert, *Novitates Zoologicae*, Vol. IX, 1902, p. 298.

Not taken by Dearborn. Hartert states he found it abundant in a stony valley covered with high grass and bushes at Beekenburg, Curaçao. He describes it as differing from *A. savannarum* in being smaller, the bill decidedly smaller. The upper head, which is divided in the middle by a cream colored line, is not so blackish, but more brownish (translation). The type is from Bonaire.

***Tiaris sharpei* (Hartert.)**

Euethia sharpei Hartert, *Bull. Brit. Orn. Club*, Vol. I, 1893, p. xxxvii. *Id. Ibis*, 1893, p. 314.

23 specimens, 11 ♂, 12 ♀.

Family **Hirundinidæ.**

***Hirundo erythrogastra* Bodd.**

Dr. Dearborn observed what he believed to be this species at Curaçao.

Family **Cærebidæ.**

***Cæreba uropygialis* Berlep.**

12 specimens, 10 ♂, 2 ♀; common. "Corners of mouth, red." (Dearborn).

Family **Mniotiltidæ.**

***Dendroica ruficapilla rufopileata* Ridgw.**

16 specimens, 8 ♂, 8 ♀; common.

Family **Mimidæ.**

***Mimus gilvus rostratus* Ridgw.**

9 specimens, 6 ♂, 3 ♀.

BONAIRE ISLAND.

The Island of Bonaire or "Buen Ayre" is of irregular shape, 24 miles long and from 3 to 4½ miles in width. It is situated some 50 miles north of Venezuela and about 30 miles east of Curaçao. In

formation and vegetation it resembles the latter. Mr. Ferry spent 6 days on this island, May 16 to 21, 1908; and a single day, January 18, during his second visit to these islands in 1909.

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BIRDS OF BONAIRE.

While on Bonaire Mr. Ferry devoted nearly all his time to the land birds and took but two specimens of water birds, *Totanus melanoleucus* and *Totanus flavipes*. The following additional species are recorded from the island by Mr. Hartert (Ibis, 1893, pp. 334-337.):

Larus atricilla Linn.

Sterna maxima Bodd.

Sterna hirundo Linn.

Sterna antillarum (Less.).

Pelecanus occidentalis Linn.

Fregata aquila (Linn.).

Phœnicopterus sp. (?)

Egretta candidissima (Gmel.).

Hydranassa tricolor (Müll.).*

Butorides virescens (Linn.).

Himantopus mexicanus (Müll.).

Pisobia minutilla (Vieill.).

Totanus melanoleucus (Gmel.).

1 specimen, ♂, taken by Mr. Ferry.

Totanus flavipes (Gmel.).

1 specimen, ♂, taken by Mr. Ferry.

Ægialitis collaris (Vieill.).

Hartert, *id.*, p. 335.

* Regarding the occurrence of this species, see remarks under Aruba., p. 196.

Ochthodromus wilsonius rufinuchus (Ridgw.).

Ægialitis rufinucha Hartert, Ibis, 1893, p. 335.

Ægialitis wilsonius rufinucha Hartert, Novitates Zoologicae, Vol. IX, 1902, p. 307.

Family **Columbidae**.

Columba gymnophthalma Temm.

3 specimens, 2 ♂, 1 ♀

Columba portoricensis Temm.

Columba corensis of authors.

1 specimen. According to Mr. Ferry, while this species is not uncommon, it is shy. Mr. Hartert states, "I met with this Pigeon only among the rocks on Bonaire, where it is fairly common near Fontein. The bill is of a dark blood-red color, horn-white at the tip. The iris consists of two rings, the outer one crimson, the inner one yellow. The naked papillose space around the eye is *yellow*, not red." (Ibis, 1893, p. 333.)

Leptotila verreauxi (Bonap.).

2 specimens, 1 ♂, 1 ♀.

Zenaida vinaceo-rufa Ridgw.

10 specimens, 7 ♂, 3 ♀.

Chæmepelia passerina perpallida (Hartert).

10 specimens, 5 ♂, 5 ♀; very common.

Family **Falconidae**.

Buteo albicaudatus colonus Berlep.

Not taken by Mr. Ferry; given by Hartert as "rare on Bonaire." (Ibis, 1893, p. 332.)

Falco sparverius brevipennis Berlep.

Not taken by Mr. Ferry. Mr. Hartert states it is "very rare on Bonaire." (Ibis, 1893, p. 332.)

Polyborus cheriway (Jacq.).

One specimen, ♂, taken by Mr. Ferry; others seen.

Family **Psittacidae.****Amazona ochroptera rothschildi** (Hartert).

Chrysotis rothschildi Hartert, Bull. Brit. Orn. Club, No. III, 1892, p. xii. *Id.* Ibis, 1893, p. 123. *Id.* Ibis, 1893, p. 328.

Mr. Ferry was unable to procure a specimen of this fine Parrot during his stay on Aruba, so I am unable to compare specimens from the type locality with the series in this Museum from Blanquilla Island; but Mr. Lowe (Ibis, 1909, p. 330) considers the Blanquilla bird to be *rothschildi*, having compared his specimens from that island with a series from Aruba including the type.

According to Hartert's description (Ibis, 1893, p. 328) *A. rothschildi* differs from *A. ochroptera* mainly in having only the anterior part of the crown, the space around the eyes, and the ear coverts yellow, and the green color of the throat reaches nearly or quite to the lower mandible on sides of chin; the chin and throat are not yellow as in *ochroptera*. In *rothschildi* the cubital edge of the wing is largely bright scarlet, while in *ochroptera* it is yellow, with only a few scattered red feathers near the body. The rump and abdomen in *rothschildi* show less or no blackish edges to the feathers and the abdomen is less distinctly tinged with blue.

The measurements of 7 adult specimens given by Hartert are as follows:

Males, wing, 8 to 8.05; tail, 4.9 to 5.4; culmen, 1.26 to 1.4; height upper mand. at base, .59 to .65.

Females, wing, 7.80 to 8.30; tail, 5.1 to 5.3; culmen, 1.26 to 1.4; height upper mand. at base, .55 to .60.

For further remarks concerning this species see under Blanquilla and Margarita (pp. 223, 242).

Conurus xanthogenius Bonap.

13 specimens, 6 ♂, 7 ♀.

Mr. Ferry informs me that this species is common on Bonaire. The golden yellow crown will always distinguish adult birds in full plumage from *C. pertinax*, and when compared in series it will be noticed that the green of the upper parts is slightly darker. There is much variation in the amount of yellow on the crown, probably due to age and season. One male has a perfect yellow crown, others, both males and females, have the crown yellow with a few green feathers, the crown green with a few yellow feathers, and

two specimens (a male and a female) have the crown entirely green without yellow and showing only a trace of orange yellow on the forehead.

Family **Caprimulgidae.**

Stenopsis cayennensis (*Gmel.*).

Not taken by Mr. Ferry on Aruba. "Breeds on Curaçao and Bonaire." (Hartert, *Ibis*, 1893, p. 319.)

Family **Trochilidae.**

Chrysolampis mosquitus (*Linn.*).

7 specimens, 4 ♂, 3 ♀.

Chlorostilbon caribæus *Lawr.*

3 specimens, 1 ♂, 2 ♀.

Family **Tyrannidae.**

Tyrannus dominicensis (*Gmel.*).

7 specimens, 4 ♂, 3 ♀; common.

Myiarchus tyrannulus brevipennis (Hartert).

1 specimen, ♀.

Mr. Hartert states it is "Not very rare near Savonet and in other well wooded places." (*Ibis*, 1893, p. 318.)

Sublegatus glaber *Scl. & Salv.*

14 specimens, 10 ♂, 4 ♀.

Mr. Ferry found this species common in wooded localities.

Elania martinica riisii (*Sclater*).

3 specimens, 2 ♂, 1 ♀.

Family **Icteridae.**

Icterus xanthornus curasoensis (*Ridgw.*).

2 specimens, both females, which apparently do not differ from specimens from Curaçao.

Family **Fringillidae.*****Ammodramus savannarum caribæus* (Hartert).**

Mr. Ferry obtained a single specimen of this form, the type of which came from this island. Mr. Hartert found it abundant in high grass on Mr. Hatchett's plantation. (*Novitates Zoologicae*, Vol. IX, 1902, p. 298.) See remarks regarding this form under Curaçao.

***Tiaris sharpei* (Hartert).**

Euethia sharpei Hartert, Bull. Brit. Orn. Club, Vol. I, No. VII, 1893, p. xxxvii, *Id.* Ibis, 1893, p. 328.

12 specimens, 8 ♂, 4 ♀.

Family **Cœrebidæ.*****Cœreba uropygialis* Berlep.**

18 specimens, 10 ♂, 8 ♀.

Family **Vireonidæ.*****Vireosylva chivi agilis* (Licht.).**

A single female specimen of this Vireo was taken January 19, 1909. It had not been previously taken on Bonaire.

Family **Mniotiltidæ.*****Dendroica ruficapilla rufopileata* Ridgw.**

14 specimens, 8 ♂, 6 ♀.

Family **Mimidæ.*****Mimus gilvus rostratus* Ridgw.**

11 specimens, 6 ♂, 5 ♀.

***Margarops fuscatus* (Vieill.).**

Margarops fuscatus Hartert, Ibis, 1893, p. 327.

Mr. Hartert found this West Indian species common in the gardens near Fontein on Bonaire, and states that he was unable to distinguish his specimens from those from the Bahamas, Haiti, Porto Rico, and St. Thomas. It is interesting to note that Mr. Lowe has since taken it on Los Hermanos. It was not observed by Mr. Ferry.

ISLAS DE AVES.

These islands are situated about 30 miles southeast of Bonaire and consist of two groups of low cays called Ave de Sotavento and Ave de Barlovento. The largest island is about $3\frac{1}{2}$ miles long, being fringed in places with mangroves and having a scant growth of grass and low bushes in the interior. Mr. Ferry visited Ave de Barlovento, the eastern group, and remained there two days, January 23 and 24, 1909. As far as I am able to learn this island had not previously been visited by a collector.

Family Sulidae.

Sula leucogastra (Bodd.).

Sula sula of authors.

3 specimens, 2 ♂, 1 ♀.

Mr. Ferry found this species common; seventy-five eggs were taken, nearly all of which were quite fresh.

Family Ardeidae.

Nyctanassa violacea (Linn.).

One female taken January 23.

Family Scolopacidae.

Numenius hudsonicus Lath.

1 specimen, ♀, January 23, 1909.

Totanus flavipes (Gmel.).

One seen but not taken.

Family Charadriidae.

Ochthodromus wilsonius rufinuchus (Ridgw.).

1 specimen, ♂; others seen.

Family Aphrizidae.

Arenaria interpres morinella (Linn.).

1 specimen, ♂.

Family **Mniotiltidae**.**Dendroica ruficapilla rufopileata** *Ridgw.*

7 specimens. 3 ♂, 4 ♀; common.

LOS ROQUES ISLANDS.

A group of small cays, situated about 30 miles east of Islas de Aves. They are all low, with the exception of El Roque, where the limestone hills rise to an altitude of several hundred feet.

"The vegetation is principally mangroves, cacti, and dwarf trees, and there is an extensive wooded swamp at the eastern end of the island." (Ferry.) I find no evidence of this island having been previously visited by a collector. Mr. Ferry's stay in this locality was from January 25 to 29, 1909.

Family **Laridae**.**Sterna maxima** *Bodd.*

1 specimen, ♂.

Family **Pelecanidae**.**Pelecanus occidentalis** *Linn.*

Mr. Ferry found this species common, but specimens were not taken.

Family **Fregatidae**.**Fregata aquila** (*Linn.*).

Seen on several occasions, but no specimens were taken in this locality.

Family **Phoenicopteridae**.**Phoenicopus ruber** *Linn.*

6 specimens, 4 ♂, 2 ♀.

"Flamingoes were common here, 25 to 30 being seen in one flock, but no signs of nests were seen in this island (El Roque). We heard of a large nesting ground in another portion of Los Roques group." (Ferry.)

Family **Ardeidae**.

Ardea herodias *Linn.*

1 specimen, ♀.

Dichromanassa rufescens (*Gmel.*).

2 specimens, both females, one in white plumage; a number seen and, according to Mr. Ferry, the white and gray phases were about equally common.

Butorides virescens robinsoni (*Richmond*).

1 specimen, ♀, which I provisionally refer to this form.

Family **Recurvirostridae**.

Himantopus mexicanus (*Müll.*).

1 specimen, ♀.

Family **Charadriidae**.

Ægialitis semipalmata *Bonap.*

1 specimen, Jan. 26, 1909.

The following species of shore birds were seen by Mr. Ferry, but no specimens were taken in this locality:

Calidris leucophæa (*Pallas*).

Totanus melanoleucus (*Gmel.*).

Totanus flavipes (*Gmel.*).

Helodromas solitarius (*Wils.*).

Squatarola squatarola (*Linn.*).

Arenaria interpres morinella (*Linn.*).

Hæmatopus palliatus *Temm.*

Only five species of land birds were taken by Mr. Ferry in this group of islands; two are apparently new.

Family **Tyrannidae**.

Myiorchus tyrannulus brevipennis (*Hartert*).

1 specimen, ♂.

Sublegatus glaber *Scl. & Salv.*

6 specimens, 1 ♂, 5 ♀.

Family Cœrebidæ.

Cœreba lowii *sp. nov.*

Type No. 36896, Field Museum of Natural History (Los Roques).

Adult male: Whole of head and throat black; under parts dark olive green, showing a tinge of gray on the lower abdomen; under tail coverts dark gray; back sooty gray or dull grayish black, not clear black like the crown; rump dark olive green; wings and tail similar to *C. wellsi*.

Length (skin), 4.10 in. (104 mm.); wing, 2.40 in. (60.8 mm.); bill, .55 in. (14 mm.); tarsus, .70 in. (17.80 mm.).

This species is similar to *Cœreba wellsi*, but differs in having the back distinctly more gray than the crown, not uniform as in *wellsi*, and the under parts more decidedly olive green. In the four specimens taken the dried skins show every indication of a tumid rictus, which does not show at all in specimens of *C. lauræ* from Los Testigos, but the color has, of course, faded out, and unfortunately Mr. Ferry made no notes as to the color of the rictus in life; he informs me, however, that he thinks it was red. I have named it in honor of Mr. Percy R. Lowe, the well known English ornithologist.

Family Mniotiltidæ.

Seiurus noveboracensis (Gmel.).

1 specimen, ♂, taken January 27, 1909.

Dendroica ruficapilla obscura *subsp. nov.*

Type No. 37255, Field Museum of Natural History (Los Roques).

Adult male: Crown dark chestnut, nearly as dark as in *D. r. capitalis* from Barbados; back and upper parts dark olive green, some of the feathers on the back with a dark shaft line; rump slightly more yellow than the back, but not so bright as in *D. r. rufopileata*; under parts deep yellow; throat and breast streaked with orange brown; secondaries and tertials edged with greenish yellow; otherwise similar to *D. r. rufopileata* except in size.

Wing, 2.50; tail, 2.15; bill, .38; tarsus, .88.

This form is similar to *D. r. rufopileata*, but is decidedly larger and has the back and rump darker olive. The crown is slightly darker chestnut and the under parts deeper yellow; the edgings of the secondaries and tertials are more greenish yellow. The female is larger and somewhat darker above.

24 specimens of this apparently well-marked form were taken, 12 males and 12 females.

The comparative measurements of the two forms are as follows:

D. r. obscura, Los Roques.

12 males; wing, 2.35 to 2.54; tail, 2 to 2.25; bill, .36 to .40.

D. r. rufopileata from Aruba, Curaçao, and Bonaire.

20 females; wing, 2.23 to 2.37; tail, 1.78 to 1.90; bill, .33 to .37.

ORCHILLA ISLAND.

Orchilla Island is situated about 15 miles east of Los Roques and 73 miles north of Cape Codera, Venezuela. It is approximately $7\frac{1}{2}$ miles long and about one mile broad. The interior of the island is high and largely barren, consisting of seven hills separated by low valleys. What vegetation there is consists principally of low bushes, together with cacti of several species, and mangroves are found along the shores. Mr. Ferry's stay on Orchilla was limited to three days, January 30 to February 1, 1909. In his notes he states that birds were comparatively scarce and confined to few species. Besides those recorded below the following species were given as not uncommon: *Pelecanus occidentalis*, *Fregata aquila*, and *Phænicopterus ruber*. So far as known, no collector had previously visited this island.

Family Columbidae.

Chæmepelia passerina perpallida (Hartert).

10 specimens, 6 ♂, 4 ♀; common.

Family Mniotiltidae.

Dendroica ruficapilla rufopileata Ridgw.

7 specimens, 4 ♂, 3 ♀.

"Common. Found a nest of this species containing 3 half-fledged young, also a young of the year dangling by a leg in a cobweb." (Ferry.)

Birds from Orchilla, Blanquilla, Tortuga, Testigos, and probably Margarita differ somewhat from *D. r. rufopileata* from Caracas and Bonaire, and those from Blanquilla and Tortuga have the wings and tail shorter. The yellow colors are brighter, especially the yellow edgings of the secondaries and tertials, which are also broader.

The crown in birds from Testigos, Blanquilla, and Tortuga is fully as dark as in *D. r. capitalis* from Barbados, but the orange-brown streaks on the under parts are narrower and more restricted than in that form. While it is probable that these birds represent fairly good insula forms and are worthy of subspecific recognition, I do not feel it is desirable to separate them, for the present at least, and have referred them all provisionally to *rufopileata*.

The comparative measurements of birds from the different islands are as follows:

ISLAS DE AVES: 3 specimens (males); wing, 2.25 to 2.37; tail, 1.80 to 1.85; bill, .33 to .37. Apparently intermediate between *rufopileata* and *obscura*.

ARUBA, CURAÇAO, AND BONAIRE: 20 specimens (males); wing, 2.23 to 2.37; tail, 1.78 to 1.90; bill, .33 to .37.

ORCHILLA: 4 specimens (males); wing, 2.24 to 2.35; tail, 1.82 to 1.88; bill, .35 to .37.

BLANQUILLA: 7 specimens (males); wing, 2.15 to 2.27; tail, 1.85 to 1.95; bill, .35 to .37.

TORTUGA: 4 specimens (males); wing, 2.20 to 2.26; tail, 1.80 to 1.90; bill, .35 to .38.

TESTIGOS: 5 specimens (males); wing, 2.24 to 2.32; tail, 1.83 to 1.90; bill, .35 to .38.

Family Mimidae.

Mimus gilvus rostratus Ridgw.

8 specimens, 4 ♂, 3 ♀, 1 ?

TORTUGA ISLAND.

The Island of Tortuga is situated 42 miles northeast of Cape Codera, Venezuela, and about 48 miles west of Margarita, and is about 12 miles long by 5 miles broad at its widest part. It is about 100 feet high at the eastern end, while the western part is low. The vegetation in the interior is scattered, being principally cacti of several species. Mr. Ferry writes: "Bird life is abundant here. The western portion of the island is lower and more plain-like and more sparsely covered with vegetation than the eastern part. There is a heavy mangrove forest on the southeastern side where a colony of Brown Pelicans nest."

Mr. Ferry reached Tortuga, February 2, and left February 4, 1909, remaining there less than three days. No collector had previously visited the island and nothing was known regarding its fauna. The results obtained in such a limited time would indicate that it is worthy of further investigation.

Family **Pelecanidae**.

***Pelecanus occidentalis* (Linn.).**

Common. No specimens were taken but Mr. Ferry found a large colony nesting among the mangroves on the southeastern part of the island. Most of the nests contained young birds varying in size.

Family **Fregatidae**.

***Fregata aquila* (Linn.).**

A number seen but none taken; "common" (Ferry).

Family **Columbidae**.

***Chæmepelia passerina perpallida* (Hartert).**

1 specimen, ♀, which apparently does not differ from those from Margarita.

Family **Psittacidae**.

***Conurus æruginosus tortugensis* subsp. nov.**

Type 36976, Field Museum of Natural History (Tortuga Island).

Adult male: Similar to *Conurus æruginosus* but differs in having decidedly more orange yellow on sides of head; the throat and sides of head below the orange patch paler (about the same color as *arubensis*); the under wing coverts more yellowish green, and the wings and tail longer.

Length (skin), about 10.25; wing, 5.65; tail, 5.50; bill, .80; tarsus, .43. (The measurements are in inches.)

Mr. Ferry procured 28 specimens of this interesting bird, the measurements of which are as follows:

8 males, wing, 5.65 to 5.85 — average 5.70 in. (144.8 mm.); tail, 5.45 to 5.40 — average 5.50 in. (139.7 mm.).

20 females, wing, 5.50 to 5.80 — average 5.55 in. (141 mm.); tail, 5.45 to 5.80 — average 5.60 in. (142.25 mm.).

Family **Trochilidae**.**Doleromya pallida** *Richmond*.

4 specimens, 3 ♂, 1 ♀, which apparently do not differ from specimens from Margarita.

Chrysolampis mosquitus (*Linn.*).

2 specimens, 1 ♀, 1 ?.

Family **Fringillidae**.**Tiaris tortugensis** *sp. nov.*

Type No. 36977, Field Museum of Natural History (Tortuga Island).

Adult male: Forehead and about half of crown blackish, gradually shading into olive gray, the black extending more on the crown than in *T. sharpei*; sides of head and whole throat and breast black; abdomen gray, the black of the breast ending rather abruptly; back olive gray, paler than *sharpei*; under wing coverts gray with no tinge of olive; otherwise resembles *T. sharpei*.

Wing, 2.14; tail, 1.75; bill, .40; tarsus, .62.

Female: Above ash gray with hardly a trace of olive, paler than *sharpei*; under parts shading from very pale brownish ashy on the throat to ashy white on the belly.

Nine specimens of this supposed new form, 8 males and 1 female, were taken. Mr. Ferry states that it was common and nesting.

Family **Cerebidae**.

Mr. John F. Ferry procured a series of 11 specimens of a well marked new species of *Cereba* on Tortuga, which I have given his name.

Cereba ferryi *sp. nov.*

Type No. 36997, Field Museum of Natural History (Tortuga Island, February 2, 1909).

Male: Similar in size and coloration to specimens of *C. luteola* from Margarita and coast of Venezuela, but differs in having the entire forehead and front of crown white and the secondaries and tertials narrowly tipped with white. In the type the frontal white patch extends upon the crown at least .30 in. from base of upper

mandible, and in none of the series (8 males, 3 females) is the white forehead less than .15 in. in width.

Length (skin), 3.75 in. (95.2 mm.); wing, 2.25 in. (57.2 mm.); tail, 1.75 in. (44.4 mm.); culmen, .38 in. (9.6 mm.).

According to Mr. Ferry, the species is common on the island. Many nests were found, but all were empty.

Family Mniotiltidae.

Dendroica ruficapilla rufopileata Ridgw.

4 specimens, all males; common.

Family Mimidae.

Mimus gilvus (Vieill.).

15 specimens, 11 ♂, 4 ♀; common.

Specimens from Tortuga vary in size of bill and coloration and are apparently intermediate between *gilvus* and *rostratus*, and might equally well be referred to either. For convenience I have considered birds from Tortuga and Margarita to be *gilvus*.

BLANQUILLA ISLAND.

The Island of Blanquilla, or Blanca, as it is sometimes called, is situated about 40 miles north of Margarita and 85 miles east of Orquilla. It is six miles long and about three miles broad at its widest part. The interior of the island is broken with ravines, most of them wooded. There is a considerable growth of trees on the western end and some groves of palms. Large areas are covered with grass.

"A Venezuelan leases the island and conducts a goat ranch. About his estate we found all the land birds occurring on the island except the large parrot. Vegetation is far more luxuriant and vigorous on this island than on any previously visited, although it is still of a semi-arid character." (Ferry.)

This island had previously been visited by Mr. Percy R. Lowe, who has published the following papers concerning its ave fauna: 1906. Bull. Brit. Orn. Club, Vol. XIX, 1906, p. 6. (Description of *Euethia johnstonei*.)

1907. On the Birds of Blanquilla Island, Venezuela. Ibis, 1907, p. 111.

1909. Notes on some Birds collected during a Cruise in the Caribbean Sea. Ibis, 1909, p. 330.

Mr. Ferry remained on Blanquilla two days, February 6-7, 1909.

Family **Pelecanidae.**

Pelecanus occidentalis *Linn.*

Common; no specimens taken. (Ferry.)

Family **Fregatidae.**

Fregata aquila (*Linn.*).

Common, but no specimens taken. (Ferry.)

Family **Ardeidae.**

Butorides virescens robinsoni (*Richmond*).

Recorded by Mr. Lowe (Ibis, 1903, p. 117); not taken by Mr. Ferry.

Family **Columbidae.**

Chamepelia passerina perpallida (*Hartert*).

7 specimens, 5 ♂, 2 ♀; common.

Mr. Lowe states: "The bill of the bird varies from orange and orange yellow to yellow at the base. In some females the bill is almost entirely black." (Ibis, 1907, p. 115.)

Family **Psittacidae.**

Amazona ochroptera rothschildi (*Hartert*).

10 specimens, 8 ♂, 2 ♀.

I have followed Mr. Lowe in considering the Blanquilla Parrot to be *rothschildi*, as he has compared his specimens with the type from Bonaire (Ibis, 1909, p. 330), but in the series before me none of the characters given as distinguishing that species are constant, and no two specimens exactly agree as to the markings, although they were all taken at practically the same time. Some specimens have the yellow throat, while in others it is entirely absent; still others have a little yellow on the chin. The greenish bar on sides of chin,

extending to the lower mandible, is also very variable, being clearly marked in some and absent in others; *one specimen has green on one side and yellow on the other*. The amount of scarlet red on the cubital edge of the wing is also variable, and to further complicate matters I cannot separate *Blanquilla* specimens from those from Margarita, where it is claimed *A. ochroptera* occurs. All of the specimens from *Blanquilla* and Margarita have the forehead whitish, shading into bright yellow on the crown and having the concealed basal portion of the feathers salmon-red. Two specimens have a few scattered bluish feathers mixed with the yellowish white on the forehead.

Compared with the few specimens of supposed *ochroptera* from Aruba and the mainland, which I have examined, the *Blanquilla* and Margarita birds differ sufficiently to entitle them to at least sub-specific recognition, but all these differences may be due to age, a matter that can only be decided by comparison with a good series of *ochroptera* in various stages of plumage. Furthermore, should the characters given *rothschildi* prove constant and the Bonaire bird never assume the yellow throat, etc., the *Blanquilla* and Margarita birds (assuming that they prove different from *ochroptera*) will require a new name; but for the present, at least, and until sufficient material is available to definitely settle the matter, it would seem best to assume that the Bonaire bird *does* occasionally assume a yellow throat and is not separable from birds from *Blanquilla* and Margarita.

Mr. Ferry writes: "These birds were common in a grove on the westerly end of *Blanquilla*, and according to the natives it is found on no other part of the island."

Family Alcedinidae.

Ceryle alcyon (Linn.).

Recorded by Mr. Lowe (*Ibis*, 1909, p. 317). It was not observed by Mr. Ferry.

Family Trochilidae.

Chrysolampis mosquitus (Linn.).

2 specimens, 1 ♀, 1 ?

Doleromyia pallida Richmond.

4 specimens, 3 ♂, 1 ?

Cannot be distinguished from specimens from Margarita.

Family **Tyrannidae**.**Tyrannus dominicensis** (*Gmel.*).

Recorded by Mr. Lowe (*Ibis*, 1909, p. 330); not taken by Mr. Ferry.

Myiarchus tyrannulus brevipennis (*Hartert*).

Recorded by Mr. Lowe (*Ibis*, 1909, p. 330); not taken by Mr. Ferry.

Family **Fringillidae**.**Tiaris johnstonei** (*Lowe*).

Euethia johnstonei Lowe, Bull. Brit. Orn. Club, Vol. XIX, 1906, p. 6. *Id.* *Ibis*, 1907, p. 120.

6 specimens, 3 ♂, 3 ♀. The characters described by Mr. Lowe seem constant.

Family **Mniotiltidae**.**Dendroica ruficapilla rufopileata** *Ridgw.*

11 specimens, 7 ♂, 2 ♀, 2 ?; common.

See remarks regarding these birds under *Orchilla*, page 218.

Family **Mimidae**.**Mimus gilvus rostratus** *Ridgw.*

7 specimens, 3 ♂, 3 ♀, 1 ?

Blanquilla specimens appear to be intermediate between *gilvus* and *rostratus*.

LOS HERMANOS ISLANDS.

A group of seven islands situated about ten miles east of *Blanquilla* and 45 miles north of the northwest point of *Margarita* Island. The largest is *Orquilla*, which rises to a height of 650 feet. Vegetation consists of cacti, agaves, coarse grass and mangroves. Mr. Ferry remained but one day on *Orquilla* (February 8, 1909) and found land birds confined to a few species, but he writes that sea birds nest there in great numbers, principally Terns and Gannets. These islands had been previously visited by Mr. P. R. Lowe, the results of his investigations being given in his paper, "Notes on some Birds collected during a Cruise in the Caribbean Sea." (*Ibis*, 1909, p. 323.)

Family **Laridæ.**

Sterna fuliginosa *Gmel.*

2 specimens taken, 1 ♂, 1 ♀.

Mr. Ferry found this species breeding in large numbers at the time of his visit (February 8).

Anous stolidus (*Linn.*).

3 specimens, 2 ♂, 1 ♀; breeding.

Family **Phaëthontidæ.**

Phaëthon æthereus *Linn.*

Mr. Ferry found this species common, but did not procure specimens. Mr. Lowe states, "We found numbers of these beautiful birds breeding in holes among the broken masses of rocks which were strewn everywhere on the steep slopes of the island, but not until we reached an altitude of about 300 feet. No attempt at making any sort of nest is made." (*Ibis*, 1909, p. 327.)

Family **Sulidæ.**

Sula cyanops (*Sundev.*).

Mr. Ferry found this species common and breeding. Two specimens were taken, an adult male and female. Mr. P. R. Lowe gives the colors of soft parts of fresh birds as follows: "Tarsi greenish drab; webs and feet dirty yellowish drab. Gular sac of an India ink color; bill greenish yellow; iris yellow." (*Ibis*, 1909, p. 324.)

Sula piscator (*Linn.*).

Mr. Lowe found the Red-footed Booby in greater numbers on this island than either of the other species. He states: "The nest is formed of twigs, grass, and sticks very roughly put together and is ludicrously small in comparison with the size of the bird. It is invariably placed in either mangrove or sea-grape bushes. By far the greater number of nests were occupied by birds in the white-tailed stage of plumage, entirely white birds of the adult stage being very scarce. One egg only is laid." (*Ibis*, 1909, p. 325.)

***Sula leucogastra* (Bodd.).**

Sula sula Lowe, Ibis, 1909, p. 324.

Common. No examples of this species were taken by Mr. Ferry, but Mr. Lowe found it abundant and nesting; he says: "The nests were invariably situated on the bare rocks and lined with a few pieces of grass or twigs. The color of the soft parts of this Gannet were taken on the spot and are as follows: *Tarsi and upper surface of webs* bright chrome yellow; *under surface of webs* greenish yellow; *gular sac* bright chrome yellow; *bill* yellow at base, shading off into bluish gray; *iris* pale gray; *eyelids* edged with bright blue, a patch of dark bluish green immediately in front of the eye." (Ibis, 1909, p. 324.)

Family Fregatidæ.***Fregata aquila* (Linn.).**

A number of these birds were seen by Mr. Ferry, but none were taken. Mr. Lowe at the time of his visit found it abundant and breeding on the island and gives some interesting notes concerning its habits. (Ibis, 1909, p. 325.)

Family Columbidae.***Chæmepelia passerina perpallida* (Hartert).**

3 specimens, 2 ♂, 1 ♀.

Family Falconidae.***Falco peregrinus anatum* (Bonap.).**

Recorded by Mr. Lowe. (Ibis, 1909, p. 324.)

Family Icteridae.

Three specimens of an apparently new form of *Holoquiscalus* were taken by Mr. Ferry on Orquilla (Los Hermanos), which I propose to name:

***Holoquiscalus orquillensis* sp. nov.**

Type No. 37090, Field Museum of Natural History (Orquilla).

Adult male: Similar to *H. insularis* from Margarita, but differs in having the middle tail feathers almost plain black, not decidedly

glossed with green as in that species, rest of tail feathers showing a slight greenish gloss, but much less than in *insularis*. The single female taken apparently does not differ from specimens from Margarita.

Wing, 4.70 (118.3 mm.); tail, 4.15 (105 mm.); tarsus, 1.15 (29.2 mm.); exposed culmen, 1.06 (26.7 mm.).

Mr. Ferry informs me that it is common on Orquilla, but whether it is found on other islands of Los Hermanos group he is unable to say, as he did not visit them. He observed no species of *Holoquistalus* on Blanquilla.

Family Fringillidae.

Tiaris johnstonei (Lowe).

A single adult male of this species was taken by Mr. Ferry, which apparently does not differ from Blanquilla specimens. Mr. Lowe also procured specimens on this island (Ibis, 1909, p. 328).

Family Mimidae.

Margarops fuscatus (Vieill.).

Mr. Ferry did not find this West Indian species either here or on Bonaire. Mr. P. R. Lowe procured three specimens on Orquilla (Los Hermanos) at an altitude of from 400 to 600 feet (Ibis, 1909, p. 328).

TESTIGOS ISLANDS.

Los Testigos are a group of islands situated forty miles from the coast of Venezuela and about fifty miles from Margarita Island. The largest is known as Testigo Grande and is about three miles long and 400 feet or more in height. Mr. Ferry's stay was limited to three days (February 12-14, 1909). He writes that he found these islands far more heavily wooded than any of the others visited, except Margarita. Good-sized trees of several varieties were common, and there was an abundance of bushes and various species of cacti and wild cotton. Snakes and land tortoises were rather common, and also a species of *Lepus*. Mr. P. R. Lowe, who had previously visited these islands, states: "Testigo Grande is thickly wooded and covered with very varied vegetation, in spite of the waterless condition in which we found it. Many of the trees attain quite respectable pro-

portions, and there seemed to me to be an unusual variety. Besides many that were unknown to me, I noticed Logwood, West Indian "Birch," Guaiacum, Acacia, Tamarind and Manchineel. Various kinds of Cactus grow on the lower slopes and on the smaller islets, and there is a great profusion of flowering bushes and even flowering plants. Wild cotton grows in abundance. * * * Geologically they consist of masses of coarse-grained granite (hornblende), enormous fragments of which, much weathered, may be seen here and there among the surrounding vegetation." (Ibis, 1909, p. 312.) Both Mr. Ferry and Mr. Lowe comment upon the unusual abundance of butterflies.

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1908. LOWE, P. R. Bull. Brit. Orn. Club, Vol. XXI, 1908, p. 108 (Description of *Cæreba lauræ*).
1909. LOWE, P. R. Notes on some Birds collected during a Cruise in the Caribbean Sea. Ibis, 1909, p. 312.

Family **Pelecanidae.**

Pelecanus occidentalis Linn.

Brown Pelicans were seen by Mr. Ferry, but none were taken.

Family **Sulidae.**

Sula leucogastra (Bodd.).

Sula sula Lowe, Ibis, 1909, p. 315.

Found breeding by Mr. Lowe on the smaller islands in large numbers (l. c.); also noted by Mr. Ferry, but no specimens were taken.

Sula piscator (Linn.).

Mr. Lowe found this Gannet breeding on the smaller islands of the group. (Ibis, 1909, p. 316.) It was also noted by Mr. Ferry.

Family **Fregatidae.**

Fregata aquila (Linn.).

Mr. Ferry found this species common, but no specimens were taken. At the time of Mr. Lowe's visit to these islands he found it breeding in large numbers.

Family **Ardeidae**.

Ardea herodias *Linn.*

Mr. Lowe observed several of these Herons on the islands. (Ibis, 1909, p. 315.) It was not taken by Mr. Ferry.

Family **Scolopacidae**.

Pisobia minutilla (*Vieill.*).

Limonites minutilla Lowe, Ibis, 1909, p. 315.

Recorded as common by Mr. Lowe.

Family **Aphrizidae**.

Arenaria interpres morinella (*Linn.*).

Several flocks seen by Mr. Lowe on Testigo Grande. (Ibis, 1909, p. 315.)

Family **Hæmatopodidae**.

Hæmatopus palliatus *Temm.*

A pair seen and one shot by Mr. Lowe. (Ibis, 1909, p. 314.)

Family **Columbidae**.

Leptotila verreauxi (*Bonap.*).

3 specimens taken by Mr. Ferry, all females.

Chæmepelia passerina perpallida (*Hartert*).

7 specimens taken by Mr. Ferry, 5 ♂, 2 ♀, which seem to agree with those from the other islands. Mr. Lowe states that "the color of the bill at the base varies in both sexes from orange to yellow, according to age." (Ibis, 1909, p. 314.)

Family **Falconidae**.

Buteo platypterus (*Vieill.*).

Buteo latissimus Lowe, Ibis, 1909, p. 313.

A bird supposed to be of this species was observed by Mr. Lowe.

Family **Strigidae**.

Two unidentified Owls were seen by Mr. Lowe. (Ibis, 1909, p. 313.)

Family **Alcedinidae**.**Ceryle alcyon** (Linn.).

Several birds of this species were seen by Mr. Lowe on Testigo Grande. It was not noted by Mr. Ferry.

Family **Trochilidae**.**Chrysolampis mosquitus** (Linn.).

Mr. Lowe found this species on one of the smaller islands of the group, but did not observe it on Testigo Grande. (Ibis, 1909, p. 317.)

Family **Tyrannidae**.**Myiarchus tyrannulus** (Müll.).

5 specimens taken, 2 ♂, 3 ♀, all of which agree very well in size and coloration with birds from Margarita.

Family **Icteridae**.**Holoquiscalus insularis** (Richmond).

18 specimens, 11 ♂, 7 ♀.

I cannot agree with Mr. Lowe in considering the bird which is found on Los Testigos to be *H. luminosus*. While the variation in size and terminal decurvature of the bill is considerable, specimens occur which agree fairly well with *insularis*, and the female is nearer in coloration to that species and may be readily distinguished from females of *H. luminosus* from Grenada, as represented in the series in this Museum. Birds from Testigos Islands seem to be intermediate between *insularis* and *luminosus* and may represent a slightly differentiated form; but it would seem undesirable to cumber ornithological nomenclature with a name based upon slight and apparently inconstant characters.

The measurements of 18 specimens are as follows:

11 males, wing, 4.60 to 4.75; tail, 4.45 to 4.55; culmen, 1.12 to 1.20.

7 females, wing, 4 to 4.10; tail, 3.75 to 3.85; culmen, 1 to 1.08.

Family **Cœrebidæ.**

Cœreba lauræ *Lowe.*

Cœreba lauræ Lowe, Bull. Brit. Orn. Club, Vol. XXI, 1908, p. 108.

11 specimens of this interesting black form of *Cœreba* were taken, 6 ♂, 4 ♀, 1 ?. It is apparently closely allied to *C. wellsi*, but differs, according to Mr. Lowe, "chiefly on account of the fact that the bright crimson and tumid rectus which is so conspicuous an object in the St. Vincent and Grenada birds is in this form entirely absent. The bill is also less curved." (*Ibis*, 1909, p. 320.)

In the specimens before me there is no indication of a soft colored rectus at base of the bill, while it is clearly indicated in dried skins of *C. lowii* from Los Roques.

Family **Mniotiltidæ.**

Dendroica ruficapilla rufopileata *Ridgw.*

7 specimens, 5 ♂, 2 ♀. These birds have the crown patch fully as dark as in *D. capitalis* from Barbados, but the under parts are streaked as in *rufopileata*.

See remarks under *Orchilla*, page 218.

Family **Mimidæ.**

Mimus gilvus rostratus *Ridgw.*

8 specimens, 6 ♂, 2 ♀, which in size of bill and coloration seem to be intermediate between *gilvus* and *rostratus*.

MARGARITA ISLAND.

The Island of Margarita is too well known to warrant more than a brief description in a paper of this character. Lying some seventeen miles from the mainland, it consists of two mountains connected by a narrow stretch of arid low land, a part of which contains a large salt lagoon bordered by a heavy growth of mangroves. The eastern

mountain is 3240 feet in height and is known as Mount Margarita, the western one being named Cerros de Macanao and having an elevation of but 2304 feet. The summits are barren, but the lower portions are covered with a luxuriant tropical vegetation and there are numerous plantations of cocoanut and fruit trees. The island is about 37 miles in length and has an area of about 440 square miles. The population is variously estimated at from 20,000 to 39,000.

Mr. Ferry devoted a month to Margarita (February 17 to March 21, 1909,) and procured a fine series of birds, including several novelties and a number of species not previously recorded from the island.

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Practically nothing was written regarding the avifauna of Margarita prior to 1895, with the exception of a few brief notes by various travelers, references to which are given by Mr. Wirt Robinson, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, pp. 651, 652.

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1902. CLARK, A. H. The Birds of Margarita Island, Venezuela. Auk, Vol. XIX, 1902, pp. 258-267.

1907. LOWE, P. R. On the Birds of Margarita Island, Venezuela. Ibis, 1907, pp. 547-570.

BIRDS OF MARGARITA.

Family **Laridae.**

Larus atricilla Linn.

Not uncommon. Mr. Ferry shot one specimen, ♂, in March. Both Captain Robinson and Mr. Clark found it common in July.

Phaethusa magnirostris (Licht.).

Captain Robinson states, "A few were seen along the beaches of Margarita." (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 653.)

***Sterna eurygnatha* Saunders.**

Given by Captain Robinson as "common along the beaches." Mr. Ferry did not find this species at Margarita, but he obtained a specimen at Aruba.

***Sterna antillarum* (Less.).**

Captain Robinson found this species abundant in July. (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 653.)

Family **Rynchopidae.**

***Rhynchops nigra* Linn.**

Both Captain Robinson and Mr. Clark found this species at Margarita in July. None were taken or observed by Mr. Ferry in January.

Family **Procellariidae.**

***Oceanites oceanicus* (Kuhl).**

Recorded by Mr. Clark, who states, "On July 2 a flock of about two dozen of these birds came about the boat in which I was crossing from the mainland." (Auk, 1902, p. 260.)

Family **Sulidae.**

***Sula leucogastra* (Bodd.).**

Mr. Clark observed what he believed to be this species between Margarita and the mainland. (Auk, 1902, p. 260.)

***Sula piscator* (Linn.).**

Mr. Clark states, "Midway between the mainland and the island a few small white Gannets, probably *Sula piscator* Vieillot, appeared." (Auk, 1902, p. 260.)

Family **Phalacrocoracidae.**

***Phalacrocorax vigua* (Vieill.).**

2 specimens, both females. This is probably the species seen by both Captain Robinson and Mr. Clark. "Locally common" (Ferry).

Family **Pelecanidae.****Pelecanus occidentalis** *Linn.*

Pelecanus fuscus of authors.

Given as common by Captain Robinson and Mr. Clark. Mr. Ferry found it common in February and March, but no specimens were taken.

Family **Fregatidae.****Fregata aquila** (*Linn.*).

Given as common by Mr. Ferry, Mr. Clark and Captain Robinson.

Family **Anatidae.****Dendrocygna** *sp. ?*

Not observed by Mr. Ferry or Mr. Clark, but Captain Robinson states: "In the lagoon at the southeast extremity of the island, I saw a flock of a half dozen tree ducks, but I was unable to approach within range. They flew off toward the mainland." (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 655.)

Family **Phoenicopteridae.****Phoenicopus ruber** *Linn.*

Recorded by Mr. Lowe. (Ibis, 1907, p. 550.)

Family **Plataleidae.****Ajaia ajaia** (*Linn.*).

1 specimen, ♀, taken by Mr. Ferry.

Family **Ibididae.****Guara rubra** (*Linn.*).

1 specimen, ♀, taken; others were seen. "The natives reported this species as quite common in the mangrove swamps bordering the lagoon." (Ferry.)

Family **Ardeidae**.

Ardea occidentalis Aud.

Mr. Lowe states: "An example of *Ardea occidentalis* was caught alive and liberated." (Ibis, 1907, p. 554.)

Ardea herodias Linn.

Mr. Lowe procured a specimen on Margarita Island, January 6, 1904. (Ibis, 1907, p. 554.)

Herodias egretta (Gmel.).

Recorded from Margarita Island by Mr. Lowe. (Ibis, 1907, p. 554.)

Egretta candidissima (Gmel.).

Leucophoyx candidissima Lowe, Ibis, 1907, p. 554.

Also recorded from Margarita by Messrs. Robinson and Clark.

Florida cærulea (Linn.).

Recorded by Mr. Lowe. (Ibis, 1907, p. 550.)

Hydranassa tricolor ruficollis (Gosse).

3 specimens, 1 ♂, 2 ♀, taken by Mr. Ferry.

Butorides virescens robinsoni (Richmond).

Butorides robinsoni Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 655.

Seen but not taken by Mr. Ferry.

Nycticorax nycticorax nævius (Bodd.).

1 specimen, a female, taken by Mr. Ferry. It had not previously been recorded from Margarita.

Nyctanassa violacea (Linn.).

1 specimen, ♀, being, as far as I am aware, the first record of its occurrence on the island. Mr. Ferry also obtained a bird of this species on Islas de Aves:

Family **Scelopacidae**.

Pisobia minutilla (Vieill.).

Limonites minutilla Lowe, Ibis, 1907, p. 553.

Not uncommon. 1 specimen, ♀, taken March 12 by Mr. Ferry; also taken by Mr. Lowe, January 6, 1904.

Ereunetes pusillus (Linn.).

1 specimen, ♀, March 12, 1909.

Ereunetes mauri (Caban.).

Ereunetes occidentalis Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 656.

Taken by Captain Robinson, July 7.

Calidris leucophæa (Pallas).

Calidris arenaria Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 656.

Taken by Captain Robinson, July 7.

Totanus flavipes (Gmel.).

Recorded as not uncommon by Mr. Lowe, who procured specimens, March 23, 1906. (Ibis, 1907, p. 554.)

Catoptrophorus semipalmatus (Gmel.).

Symphemia semipalmata Lowe, Ibis, 1907, p. 553.

Mr. Ferry took a female of this species, March 12, 1909. Mr. Lowe states he observed several flocks of these birds and took an adult specimen, March 24, 1906.

Actitis macularia (Linn.).

Tringoides macularius Lowe, Ibis, 1907, p. 553.

Taken by Mr. Lowe, January 6, 1904.

Numenius hudsonicus Lath.

3 specimens, 2 ♂, 1 ♀. Not previously recorded from Margarita.

Family Charadriidae.

Ægialitis semipalmata Bonap.

Recorded by Mr. Lowe, who procured an adult female, January 9, 1904. (Ibis, 1907, p. 553.) It was also taken by Captain Robinson in July.

Ægialitis nivosa Cass.

Recorded by Messrs. Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 656. Mr. Robinson obtained a specimen, July 2.

Ægialitis collaris Vieill.

Mr. Robinson found this species common along the beaches in July. (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 657.)

Ochthodromus wilsonius rufinuchus (*Ridgw.*).

Not uncommon. Five specimens taken by Mr. Ferry, 2 ♂, 3 ♀; also noted by Messrs. Lowe, Richmond, and Robinson.

Family **Aphrizidæ.**

Arenaria interpres morinella (*Linn.*).

Arenaria interpres Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 657 (July); Clark, Auk, 1902, p. 260 (July).

Not recorded by Mr. Ferry in February and March.

Family **Ædicnemidæ.**

Ædicnemus bistriatus (*Wagler*).

Captain Robinson states, "In a courtyard of a dwelling in Por-lamar, I saw several pairs of these birds, and their owner told me that he had caught them when not fully fledged in the wide savanna to the west of the town." (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 656.)

Family **Hæmatopodidæ.**

Hæmatopus palliatus *Temm.*

Recorded by Mr. Lowe. (*Ibis*, 1909, p. 314.)

Family **Odontophoridæ.**

Eupsychortyx pallidus *Richmond.*

9 specimens, 6 ♂, 3 ♀.

"These birds were found in abundance at Mocanao, the peninsula at the west end of the island, and in riding along the cactus-covered plains from Boca del Rio (south central part of the island) we saw several flocks." (Ferry.)

I have examined the type (taken July 2) described by Dr. Richmond (Proc. U. S. Nat. Mus., 1895, p. 657) and compared it with the specimens taken by Mr. Ferry on Margarita in February and March, and they are strikingly different in coloration. Far from being pale, they are distinctly the reverse, being fully as highly colored as any of the allied forms from the mainland. It would seem probable that the difference is due to season, as it is unlikely that two forms of the same species inhabiting the same localities would be found on Mar-

garita; but to complicate matters Mr. Lowe procured specimens in January, 1904, which he describes as *much paler* than birds from the mainland (Ibis, 1907, p. 551). Compared with birds from British Guiana (March) and Caracas, Venezuela (March), the specimens from Margarita (March) are darker and the markings, especially on the under parts are quite different.

In the six males now before me the breast is plain, bright, rufous chestnut in some and rufous chestnut tinged with vinaceous in others. All the specimens show a black collar, but some have the throat mixed black and rufous, others tawny and white, while one has the throat plain white. On the lower breast and upper belly the feathers are marked with black and white, but the middle portion of the feather is bright rufous chestnut, not dark chestnut, as in Venezuela specimens, and the white spots are larger and fewer in number. On the upper parts the back and scapulary feathers show more deep chestnut than birds from British Guiana and Venezuela and the crest is longer and somewhat paler. The Margaritan bird approaches nearer in coloration to *E. parvicristatus* than to *E. sonnini*, but the general markings are somewhat different and the crest is longer and paler.

The differences between the Margaritan bird and *E. cristatus* (Linn.) from Aruba and Curaçao are so pronounced that comparison is not necessary.

The measurements of eight specimens from Margarita are as follows:

♂	wing,	4.05;	tail,	2.50;	tarsus,	1	; bill,	.50;	crest feathers,	1.10
♂	"	4.20;	"	2.55;	"	1	; "	.50;	"	1.12
♂	"	4.12;	"	2.50;	"	1.05;	"	.48;	"	1.15
♂	"	4.05;	"	2.48;	"	1.05;	"	.50;	"	1.15
♂	"	4.15;	"	2.45;	"	1.02;	"	.50;	"	1.18
♂	"	4.05;	"	2.50;	"	1	; "	.52;	"	1.20
♀	"	4	; "	2.50;	"	1	; "	.48;	"	1
♀	"	4.05;	"	2.45;	"	1	; "	.48;	"	1.05

Family Cracida.

Ortalis ruficauda Jardine.

1 specimen, ♀, taken March 5, 1909.

"These birds are common locally throughout the mountainous portion of the island and are found at an altitude where humid conditions are met. They are extremely shy." (Ferry.)

Captain Robinson saw specimens of this bird in captivity on Margarita, but he did not obtain specimens in the wild state. As far as I am aware, it has not previously been taken by a collector from this locality.

In the single specimen before me the sides of the body and under tail coverts are clear red brown, not tawny rufous brown as in specimens I have examined from Tobago, and the ends of the tail feathers are darker rufous brown, otherwise it is apparently similar to birds from that island. I have not been able to compare it with specimens from Venezuela.

Family Columbidae.

Columba gymnophthalma Temm.

2 specimens, 1 ♂, 1 ♀.

Leptotila verreauxi (Bonap.).

Leptotila insularis Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 659. Clark, Auk, XIX, 1902, p. 261.

3 specimens, 2 ♂, 1 ♀.

I cannot distinguish specimens from Margarita from those from the mainland or from Trinidad, and cannot agree with Dr. Richmond in recognizing the island form as separable. Mr. Lowe describes the colors of the soft parts in the fresh state as, "Circumorbital space bright cobalt-blue. Iris dirty yellow. Bill uniformly black; tarsi and feet reddish pink." (Ibis, 1907, p. 552.)

Zenaida vinaceo-rufa Ridgway.

Recorded from Margarita by Robinson and Richmond (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 658). Not observed by Mr. Ferry.

Chæmepelia passerina perpallida (Hartert).

13 specimens, 5 ♂, 8 ♀.

These birds are apparently similar to those from the other islands.

Chæmepelia rufipennis Bonap.

Recorded by Captain Robinson and Mr. Clark. Mr. Ferry did not procure specimens, but writes, "Several of these birds were seen at an altitude of about 1800 feet in a very dry forested hillside."

Scardafella ridgwayi Richmond.

Scardafella ridgwayi Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 660.

19 specimens, 10 ♂, 9 ♀.

This well-marked form is reported very common on Margarita.

Family **Cathartidae.****Cathartes aura** (*Linn.*).

Recorded as common by Captain Robinson (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 661); also noted by Messrs. Lowe and Clark. Mr. Ferry informs me he found it common on the island; but no specimens were taken.

Catharista urubu (*Vieill.*).

Catharista atrata of authors.

Mr. Ferry found this species common at sea-level, but only occasionally at higher altitudes. No specimens were taken.

Given by Mr. Clark as abundant near Porlamar. "Abundant everywhere." (Robinson.)

Family **Falconidae.****Buteo albicaudatus** *Vieill.*

1 specimen, ♂.

"Distributed throughout the island, but nowhere common; usually one pair to a locality. On March 1, found a nest containing three eggs in the northeastern portion of the island. The nest was built on the outer branch of an acacia tree. Incubation was far advanced; the female was very wild but I was able to secure the male. The crop was full of grasshoppers." (Ferry.) The eggs are soiled white and measure 2.25 x 1.80 in.

Falco sparverius isabellinus (*Swains.*).

Falco sparverius Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 661. Clark, Auk, 1902, p. 261.

Cerchmeis isabellina Lowe, Ibis, 1907, p. 556.

6 specimens, 4 ♂, 2 ♀.

The four males are all adult and have the top of the head blue gray, without rufous, and the under parts unspotted.

Males, wing, 6.75 to 7 ; tail, 4.85 to 5.10; tarsus, 1.20

Females, " 7.25 to 7.50; " 5.25 ; " 1.25

Gampsonyx swainsoni *Vigors.*

Mr. Ferry procured a single specimen of this species, a male, taken at Porlamar, February 2, 1909. Mr. Clark found it common at El Valle in the summer of 1901 (Auk, 1902, p. 261).

Polyborus cheriway (Jacq.).

1 specimen, ♀, taken March 9; others seen.

Family **Strigidae**.

Speotyto brachyptera Richmond.

Speotyto brachyptera Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 663.

1 specimen, ♀.

Pisorhina choliba (Vieill.).

Megascops choliba Berlepsch, Bull. Brit. Orn. Club, Vol. XII, 1902, p. 9.

Megascops brasilianus Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, p. 662, Clark, Auk, 1902, p. 262.

Pisorhina choliba Lowe, Ibis, 1907, p. 556.

3 specimens, 2 ♂, 1 ♀, which are decidedly smaller and paler than those I have examined from British Guiana and Colombia. Judging from the material before me, the Margaritan birds are separable at least subspecifically, but from lack of a satisfactory series for comparison, I refer it provisionally to this species.

Glaucidium phalænoides (Daudin).

Recorded by Captain Robinson and Mr. Clark. It was not taken or observed by Mr. Ferry.

Aluco *sp.* ?

Mr. Ferry saw what he believed to be a species of *Aluco* in a cave in the mountain above El Valle, but the bird was not taken.

Family **Psittacidae**.

Amazona ochroptera rothschildi (Hartert).

Amazona ochroptera Lowe, Ibis, 1907, p. 557.

4 specimens, 2 ♂, 1 ♀, 1 ?, which are referred provisionally to this form. (See remarks under *Blanquilla*, page 223.)

Amazona amazonica (Linn.).

I have examined a specimen of this species in the collection of the Smithsonian Institution, taken on Margarita by Captain Robinson

in July. Mr. Clark also found it not uncommon in July (Auk, 1902, p. 262), but it was not observed by either Mr. Ferry or Mr. Lowe, who visited the island in February and March. Strange to say, both Mr. Ferry and Mr. Lowe found *A. ochroptera rothschildi* not uncommon, which was not noted by Captain Robinson or Mr. Clark later in the season. Captain Robinson states, "I saw many large flocks in the heavy forest in rear of El Valle." (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 664.)

***Conurus æruginosus* (Linn.).**

22 specimens; 10 ♂, 12 ♀.

Mr. Ferry found this species very common in the vicinity of Poralamar. It appears to be generally distributed throughout the lower portions of the island.

***Conurus neoxenus* sp. nov.**

Type No. 37454, Field Museum of Natural History (Margarita Island).

Adult male: General plumage bright green, brightest on the cheeks and lores and palest on the under parts; forehead and front of head from above the eye, including about two-thirds of crown, dull blue; lesser under wing coverts green; greater under wing coverts olive yellow; quills green with black shafts; the greater portion of the inner webs olive yellow on basal three-fourths; terminal portion of inner webs edged with dusky brown; the fourth, fifth and sixth primaries with dark tips (from $\frac{1}{4}$ to $\frac{1}{2}$ inch in length), showing a faint bluish tinge near the ends; under surface of inner webs olive yellow; the outer feathers edged with dusky brown near the ends; upper surface of two middle tail feathers green with dark shafts; the rest have the greater portion of the inner web deep red; outer webs and ends of inner webs green. These colors are replaced on the under surfaces by golden olive and lighter red. Both mandibles pale, the under one dark near the edge.

Length (skin), 13 in.; wing, 7.20; tail, 7; tarsus, .55; bill, 1.15.

This species is somewhat similar to *Conurus hæmorrhous* from Brazil, but differs in the darker green plumage, wing markings, extent of blue on the head, etc.

Two specimens, a male and a female, were taken. Mr. Ferry informs me they were shot March 11, 1909, in a cactus country near Boca del Rio in the south central portion of the island.

Family **Cuculidae**.

Crotophaga ani *Linn.*

8 specimens, 3 ♂, 2 ♀, 3 young.

Diplopterus nævius (*Linn.*).

Captain Robinson states: "I saw several pairs of these birds in the small thickets on the partly bare hillsides near El Valle, and obtained one specimen." (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 665.) It has not been recorded by other writers from Margarita and was not seen by Mr. Ferry.

Family **Bucconidae**.

Bucco bicinctus (*Gould*).

7 specimens, 2 ♂, 5 ♀.

"These birds were distributed throughout the island and are probably common." (Ferry.)

Family **Alcedinidae**.

Ceryle torquata (*Linn.*).

Recorded by Mr. Lowe. (Ibis, 1907, p. 550.)

Ceryle alcyon (*Linn.*).

Recorded by Mr. Lowe. (Ibis, 1907, p. 550.)

Family **Picidae**.

Melanerpes subelegans (*Bonap.*).

Melanerpes subelegans Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 666. Clark, Auk, 1902, p. 263. Lowe, Ibis, 1907, p. 560.

13 specimens, 5 ♂, 8 ♀. Apparently does not differ from specimens from the mainland.

Family **Caprimulgidae**.

Chordeiles acutipennis (*Bodd.*).

Recorded by Mr. Clark (Auk, 1902, p. 263) and Captain Robinson (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 668). It was not taken by Mr. Ferry.

Stenopsis cayennensis (Gmel.).

Stenopsis cayennensis Clark, Auk, 1902, p. 263. Lowe, Ibis, 1907, p. 558.

Mr. Ferry procured three specimens of this species, 2 females and a male; one of the former about half grown.

Family **Micropodidae**.**Chætura cinereiventris lawrencei** Ridgway.

Recorded by Captain Robinson, who took a specimen at El Valle (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 668). Swifts supposed to be this species were seen by Mr. Lowe (Ibis, 1907, p. 550).

Family **Trochilidae**.**Chrysolampis mosquitus** (Linn.).

One specimen, an immature female, was taken by Mr. Ferry at La Asuncion March 5, 1909. It is apparently not common on Margarita, as Mr. Lowe obtained only one of this species (Ibis, 1907, p. 118). It was not obtained by Captain Robinson or Mr. Clark.

Chlorostilbon caribæus Lawr.

4 specimens, 3 ♂, 1 ♀. Not uncommon, but apparently does not differ from examples of this species from other localities.

Doleromya pallida Richmond.

Doleromya pallida Richmond, Auk, 1895, p. 369.

14 specimens, 13 ♂, 1 ?

This well-marked form seems to be common throughout the lower parts of the island. Mr. Ferry found it very common in the vicinity of Porlamar and Mr. Lowe gives it as "Very common everywhere in the cactus-scrub."

Amazilia aliciae Richmond.

Amazilia aliciae Richmond, Auk, 1895, p. 670.

5 specimens, 1 ♂, 3 ♀, 1 ?

Mr. Ferry procured specimens at Porlamar and at La Asuncion. Mr. Lowe says: "I only saw this bird in the heights above El Valle, among the tall forest trees." (Ibis, 1907, p. 558). Captain Robinson says: "None at all were found in the coast region and only a few in El Valle; but in ascending the heavily wooded mountains in rear,

they became more abundant until, when I had reached the perpetual clouds that hung about the peak and entered an atmosphere of mist, they were seen in all directions." (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 670.)

Family Tyrannidae.

Milvulus tyrannus (Linn.).

Captain Robinson found this species common in July (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 672).

Tyrannus dominicensis (Gmel.).

Tyrannus dominicensis Robinson & Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 672. Clark, Auk, 1902, p. 263.

Mr. Ferry procured a pair of these birds at La Asuncion and others were seen.

Tyrannus melancholicus satrapa (Cab. & Heine).

11 specimens, 7 ♂, 4 ♀.

Myiarchus tyrannulus (Müller).

16 specimens, 11 ♂, 4 ♀, 1 ?

Sublegatus glaber ScL. & Salv.

Sublegatus arenarum Lowe, Ibis, 1907, p. 562.

9 specimens, 4 ♂, 3 ♀, 2 ?

In the Margaritan specimens before me the yellow on the under parts is brighter than in birds from Bonaire, Aruba, and Venezuela (Caracas).

Euscarthmus impiger ScL. & Salv.

3 specimens, 1 ♂, 1 ♀, 1 ?

"These birds were found only on the arid plains at the west end of the island among the exceedingly dry chaparral." (Ferry.) The specimens apparently do not differ from those from the mainland. The species has not been previously recorded from Margarita.

Family Pipridae.

Chiroprion lanceolata (Wagler).

18 specimens, 11 ♂, 7 ♀,

Mr. Ferry found this species common in heavily wooded districts. Captain Robinson found it breeding in July (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 672).

Family **Formicariidae.****Thamnophilus doliatus** (*Linn.*).

14 specimens, 6 ♂, 8 ♀.

The females are paler than birds from Venezuela in the Museum collection, although they agree very well with those from Tobago. Mr. Ferry found these birds common in the underbrush of the higher mountain regions. On March 3 a female was observed feeding two nearly full-grown young birds.

Formicivora intermedia *Caban.*

11 specimens, 8 ♂, 3 ♀.

Family **Dendrocolaptidae.****Dendroplex longirostris** *Richmond.*

11 specimens, 6 ♂, 5 ♀.

The characters given by Dr. Richmond as distinguishing this species appear to be constant. "These birds were tolerably common and almost universally distributed over the island. They were equally at home upon the arid cactus-covered plains and in the dense forests on the mountains." (Ferry.)

Dendroornis susurrans (*Jard.*).

1 specimen, ♀.

Mr. Ferry took a single specimen of this species in a dense forest on a mountain called El Copey at an altitude of 2500 feet. It differs slightly from specimens from Tobago and the mainland in having the under parts more olive and the shaft stripes on the head and breast feathers more tawny. Whether these differences are constant or not remains for future investigators to determine.

Family **Furnariidae.****Synallaxis albescens nesiotis** *Clark.*

Synallaxis albescens Robinson & Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 674.

Synallaxis albescens nesiotis Clark, Auk, 1902, p. 264.

8 specimens, 7 ♂, 1 ♀.

In the series before me the characters given by Mr. Clark in separating this subspecies seem fairly constant.

Family **Icteridae**.

Icterus icterus (Linn.).

24 specimens, 17 ♂, 7 ♀.

Icterus xanthornus helioeides Clark.

Icterus xanthornus Robinson & Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 675.

Icterus xanthornus helioeides Clark, Auk, 1902, p. 265.

44 specimens, 31 ♂, 11 ♀, 2 juv.

As stated by Mr. Clark, the Margaritan bird is somewhat more highly colored and the black throat *averages* more extensive. The differences in the bill and feet, although slight, appear to be fairly constant.

Holoquiscalus insularis (Richmond).

Quiscalus insularis Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 675. Clark, Auk, 1902, p. 265. Lowe, Ibis, 1907, p. 570.

Holoquiscalus insularis Ridgway, Proc. Wash. Acad. Sci., Vol. III, 1901, p. 151.

11 specimens, 7 ♂, 4 ♀.

Family **Fringillidae**.

Tiaris bicolor omissa (Jardine).

20 specimens, 12 ♂, 8 ♀.

Cardinalis phoeniceus robinsoni Richmond.

Cardinalis robinsoni Richmond, Auk, 1895, p. 370. Robinson & Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 676. Clark, Auk, 1902, p. 265.

Cardinalis phoeniceus robinsoni Lowe, Ibis, 1907, p. 567.

47 specimens, 35 ♂, 12 ♀.

It is with considerable hesitation that I have admitted the Margaritan bird to even subspecific recognition. In the comparatively large series before me, none of the supposed distinguishing characters are constant. I do not find any noticeable difference in size or coloration, although a majority of the birds have the crests shorter than those from the mainland.

Volatinia jacarini splendens (*Vieill.*).

Recorded by Captain Robinson (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 677), but not observed by other ornithologists who have visited the island.

Coryphospingus pileatus (*Newwied*).

Mr. Ferry procured 3 specimens, all males, which agree very well with specimens from the mainland. The species has not previously been recorded from Margarita. "These birds were fairly common in the arid areas of chaparral back of the town of Macanao. They were found nowhere except upon these dry forested plains and kept to the underbrush rather than to higher trees." (Ferry.)

Family **Tangaridae**.**Tangara palmarum melanoptera** (*Sclater*).

16 specimens, 8 ♂, 8 ♀.

Tangara glaucocolpa (*Caban.*).

7 specimens, 4 ♂, 3 ♀.

Tachyphonus melaleucus (*Sparrm.*).

7 specimens, 5 ♂, 2 ♀.

Family **Hirundinidae**.**Progne chalybea** (*Gmel.*).

Mr. Ferry procured an adult male of this species at Porlamar. Captain Robinson and Mr. Clark found it nesting at Porlamar and also at El Valle.

Family **Vireonidae**.**Vireosylva chivi agilis** (*Licht.*).

Captain Robinson states that he found this Vireo common in the forests around El Valle (Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 678). It was not taken by Mr. Ferry.

Pachysylvia griseipes (*Richmond*).

Hylophilus griseipes Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 678. Clark, Auk, 1902, p. 266.

Pachysylvia griseipes Lowe, Ibis, 1907, p. 561.

6 specimens, 3 ♂, 3 ♀.

Family **Cœrebidæ.**

Cœreba luteola (Caban.).

11 specimens, 6 ♂, 5 ♀.

Cyanerpes cyaneus brevipes (Caban.).

Arbelorhina brevipes Cabanis, Mus. Hein., I, 1850, p. 96.

Arbelorhina eximia Cabanis, Mus. Hein., I, 1850, p. 96.

Arbelorhina cyanea eximia Robinson & Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 679.

A single male taken at Porlamar, February 17, which is noticeable for its large bill. The measurements are as follows: wing, 2.45; tarsus, .46; bill, .82.

Dacnis plumbea (Lath.).

10 specimens, 6 ♂, 4 ♀.

The Margaritan birds apparently do not differ from those from other localities. The species has not previously been recorded from the island. "These birds were common in mangrove swamps at Boca del Rio; 2 or 3 were usually seen together." (Ferry.)

Family **Mniotiltidæ.**

Dendroica ruficapilla rufopileata Ridgw.

A single immature specimen was taken by Mr. Ferry on Margarita, which I refer provisionally to this form. See remarks on page 218.

Compsothlypis pitiauyumi (Vieill.).

2 specimens, 1 ♂, 1 ♀; not previously recorded from Margarita.

Setophaga ruticilla (Linn.).

Mr. Lowe states that he procured three specimens, March 19-20, 1906. (Ibis, 1907, p. 565.) It was not observed by Mr. Ferry.

Family **Mimidæ.**

Mimus gilvus (Vieill.).

31 specimens, 18 ♂, 11 ♀, 2 ?

Many specimens are more or less indeterminate, but the majority approach nearer *gilvus* than to *rostratus*.

Family **Sylviidae**.**Polioptila plumiceps** *Lawrence*.

19 specimens, 7 ♂, 8 ♀, 4 ?.

Family **Turdidae**.**Planesticus gymnophthalmus** (*Caban.*).

1 specimen, a female, which does not apparently differ from specimens from the mainland. The species has not previously been recorded from Margarita.

Platycichla venezuelensis atra *subsp. nov.*

Platycichla carbonaria Robinson and Richmond, Proc. U. S. Nat. Mus., Vol. XVIII, 1895, p. 681.

Type No. 37714, Field Museum of Natural History (Margarita Island, Venezuela.).

Adult male: Whole of head, nape, and under parts (except sides of body, flanks, and under tail coverts) black; sides of body, flanks, and under tail coverts dark slaty gray; back and rump slaty gray, many of the feathers tipped with black; scapulars slaty gray, edged with black; wings and tail black; bill, legs, feet, and eye-ring yellow.

Length (skin), 8.40; wing, 4.50; tail, 3.50; tarsus, 1; bill, .72.

This form is similar to *P. melanopleura* Sharp, but differs in having the entire head black and the under tail coverts and axillaries gray. From *P. venezuelensis* it differs in having the entire under parts (except the sides, flanks, and under tail coverts) black, while the mainland form as represented by specimens from Venezuela in this Museum have only the throat and breast black and the rest of the under parts gray. Females from Margarita do not appear to differ from those of *P. venezuelensis*.

Mr. John F. Ferry informs me he found these birds common in the dense forests of the humid mountain regions, particularly at El Copey above La Asuncion.

TABLE OF SPECIES AND SUBSPECIES

✕=specimens in this Museum; +=recorded by other writers;
○=observed but not taken.

	Aruba	Curaçao	Bonaire	Islas de Aves	Los Roques	Orchilla	Tortuga	Blanquilla	Los Hermanos	Testigos Is.	Margarita
<i>Larus atricilla</i>	+	+	+								✕
<i>Phaethusa magnirostris</i>	✕										+
<i>Sterna maxima</i>	✕	+	+		✕						
<i>Sterna eurygnatha</i>	✕										+
<i>Sterna hirundo</i>	✕	+	+								
<i>Sterna dougalli</i>	+										
<i>Sterna antillarum</i>	✕		+								+
<i>Sterna fuliginosa</i>	✕								✕		
<i>Sterna anæthetus</i>	+										
<i>Anous stolidus</i>									✕		
<i>Rhynchops nigra</i>											+
<i>Oceanites oceanicus</i>											+
<i>Phaëthon æthereus</i>											
<i>Sula leucogastra</i>				✕					+	+	
<i>Sula piscator</i>									+	+	
<i>Sula cyanops</i>									✕		
<i>Phalacrocorax vigua</i>	✕										✕
<i>Pelecanus occidentalis</i>	✕	+	+		○	○	○	○		○	+
<i>Fregata aquila</i>	✕	+	+		○	○	○	○	+	○	+
<i>Dendrocygna</i> sp ?											+
<i>Phœnicopterus ruber</i>	+		+		✕	○					+
<i>Ajaia ajaia</i>	✕										✕
<i>Guara rubra</i>											✕
<i>Ardea occidentalis</i>											+
<i>Ardea herodias</i>		+			✕					+	+
<i>Herodias egretta</i>											+
<i>Egretta candidissima</i>	+		+								+
<i>Hydranassa tricolor</i>	+		+								
<i>Hydranassa tricolor ruficollis</i>	+										✕
<i>Florida cærulea</i>	✕										+
<i>Dichromanassa rufescens</i>					✕						
<i>Butorides virescens</i> ?		+	+								
<i>Butorides virescens robinsoni</i>	✕				✕			+			+
<i>Nycticorax nycticorax nævius</i>											✕
<i>Nyctanassa violacea</i>				✕							✕
<i>Himantopus mexicanus</i>		+	+		✕						
<i>Pisobia maculata</i>	✕										
<i>Pisobia minutilla</i>		+								+	✕
<i>Ereunetes pusillus</i>	✕										✕
<i>Ereunetes mauri</i>											+

	Aruba	Curacao	Bonaire	Islas de Aves	Los Roques	Orchilla	Tortuga	Blanquilla	Los Hermanos	Testigos Is.	Margarita
<i>Bucco bicinctus</i>										+	✕
<i>Ceryle torquata</i>										+	✕
<i>Ceryle alcyon</i>								+		+	✕
<i>Melanerpes subelegans</i>											✕
<i>Chordeiles acutipennis</i>		○									✕
<i>Stenopsis cayennensis</i>		+	+								✕
<i>Chaetura cinereiventris lawrencei</i>											✕
<i>Florisuga mellivora</i>	✕										✕
<i>Chrysolampis mosquitos</i>	✕	✕	✕				✕	✕		+	✕
<i>Chlorostilbon caribæus</i>	✕		✕								✕
<i>Doleromyia pallida</i>							✕	✕			✕
<i>Amazilia aliciae</i>											✕
<i>Milvulus tyrannus</i>											✕
<i>Tyrannus dominicensis</i>	✕	✕	✕					+			✕
<i>Tyrannus melancholicus satrapa</i>	✕	✕									✕
<i>Myiarchus tyrannulus</i>										+	✕
<i>Myiarchus tyrannulus brevipennis</i>	✕	✕	✕		✕			+			✕
<i>Sublegatus glaber</i>	✕	✕	✕		✕						✕
<i>Elænia martinica riisii</i>	✕	✕	✕								✕
<i>Euscarthmus impiger</i>											✕
<i>Chiropirion lanceolata</i>											✕
<i>Thamnophilus doliatus</i>											✕
<i>Formicivora intermedia</i>											✕
<i>Dendroplex longirostris</i>											✕
<i>Dendornis susurrans</i>											✕
<i>Synallaxis albescens nesiotis</i>											✕
<i>Icterus icterus</i>											✕
<i>Icterus icterus ridgwayi</i>	✕	+									✕
<i>Icterus xanthornus curasoensis</i>	✕	✕	✕								✕
<i>Icterus xanthornus helioeides</i>											✕
<i>Holoquiscalus insularis</i>										✕	✕
<i>Holoquiscalus orquillensis</i>									✕		✕
<i>Dolichonyx oryzivorus</i>	✕										✕
<i>Spiza americana</i>	✕										✕
<i>Brachospiza capensis insularis</i>	✕	✕									✕
<i>Ammodramus savannarum caribæus</i>		+	✕								✕
<i>Tiaris sharpei</i>	✕	✕	✕								✕
<i>Tiaris johnstonei</i>											✕
<i>Tiaris tortugensis</i>							✕				✕
<i>Tiaris bicolor ommissa</i>								✕			✕
<i>Cardinalis phœniceus robinsoni</i>									✕		✕
<i>Volatinia jacarini splendens</i>											✕
<i>Coryphospingus pileatus</i>											✕
<i>Tangara palmarum melanoptera</i>											✕
<i>Tangara glaucocolpa</i>											✕
<i>Tachyphonus melaleucus</i>											✕
<i>Progne chalybea</i>											✕
<i>Hirundo erythrogaster</i>		○									✕
<i>Vireosylva chivi agilis</i>			✕								✕
<i>Pachysylvia griseipes</i>											✕
<i>Cœreba uropygialis</i>	✕	✕	✕								✕
<i>Cœreba luteola</i>											✕
<i>Cœreba ferryi</i>							✕				✕

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CATALOGUE OF A COLLECTION OF BIRDS FROM COSTA RICA

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CHICAGO, U. S. A.

September, 1910.

CATALOGUE OF A COLLECTION OF BIRDS FROM COSTA RICA.*

BY JOHN FARWELL FERRY.

The birds considered in this paper were collected in Costa Rica during January, February and March of 1908 in localities upon the country's Atlantic slope. Though the rainy season was in progress, collecting was not seriously interfered with considering the time as a whole.

Guayabo was visited from January 15 to February 6. The term Guayabo appears to apply generally to a rich grazing district lying several hours' horseback journey below Turrialba Station on the Northern Railway of Costa Rica. This locality is one of heavily forested slopes, cut by deep wooded ravines, and interspersed with great reaches of luxuriant lawn. Lofty, wide-branching trees stand singly or in groups about the lawns, and are a picturesque feature of the landscape. They play an important part in the bird-life of the region. The top of each tree, a small forest in itself, attracts a great number of birds at dusk, which come to roost for the night. About sun-down these tree-tops seem fairly alive with birds.

Don Juan Gomez was my host at Guayabo, and at his comfortable estate everything was done for my comfort and to assist me in my work. The consideration and courtesy he extended to me is so highly appreciated that a mere mention of it seems totally inadequate.

With pack animals, a journey of some twenty miles was made in a northerly direction from Cartago, a former capital of the Republic. The locality thus reached is known as Coliblanco, an extensive region situated upon one of the buttressing slopes of the Volcan de Turrialba at an altitude of about 6,500 feet. The region is heavily timbered, hilly, and cut by numerous ravines through which small mountain torrents flow. Numerous clearings are cultivated or used for grazing. My headquarters were at the estate of Don Aurelio Calleja, a prosperous resident of Cartago. The scenery at Coliblanco was of great beauty, the more rugged growth of a high altitude blending with tropical luxuriance. Collecting was fairly good in this locality,

*Posthumous; Mr. Ferry died February 11, 1910.

though dense shrubbery and jungle-grown ravines offered many a retreat where birds, though abundant, could not be secured. The collector's most serious difficulty, however, was due to the abundance of parasitic growths upon the trunks and branches of the trees. Epiphytes, ferns, orchids and climbing vines occurred in such profusion that many a bird, fairly killed, would lodge during its fall in one of these parasites. Its recovery was usually impossible. Back of the potrero, or pasture, surrounding the Calleja estate, was a steep forested slope. A climb of a thousand feet brought one to a series of grass-covered meadows, dotted with tall trees, shrubbery, and hemmed in by gloomy forests. Here the bird-life was noticeably different from that lower down. The Calandria or Three-wattled Bell-bird, was here in abundance, though absent below. Other birds found here in large numbers, though rare or absent at the lower level, were *Myioborus aurantiacus*, *Myioborus torquatus*, *Oreothlypis gutturalis* and *Catharus gracilirostris*. Quezals were reported as being very common here.

The nights at Coliblanco were extremely chilly and the days varied from moderate to cool. Much rain fell during my stay, which extended from February 8 to 23.

The next region visited was at the base of the Ash-cone of the volcano of Turrialba, at an altitude of about 9,000 feet. It was a five hours' climb by pack animals from Coliblanco. Don Francisco Gutierrez gave me lodgings at his lecheria, or dairy-farm, and was a most agreeable companion and kind host. Collecting was done here from February 23 to March 2. The natural beauty of the region excites the greatest admiration. The lecheria was in the midst of an open park-like forest. The foliage varied from the brightest green to copper color, while each tree bore flowers of various hues, either of its own or of some parasitic growth, as of vines, bromeliads, or orchids. As can be imagined, the park was a paradise for hummers as well as for other insectivorous birds that preyed upon the insects that sought the flowers. A heavy forest surrounds the Ash-cone, and many deep and densely wooded ravines make much of the region almost impassable. However, grassy slopes occur here and there, a boon alike to the cattle-raiser and the collector. Two characteristic birds of this place are the Quezal and the Three-wattled Bell-bird.

The volcano was ascended to its summit (11,067 feet) and its sole avian inhabitants were the Volcano junco and *Selasphorus torridus*.

On March 3 the journey to sea-level was begun. Odd days were

utilized for collecting, on January 14 at Turrialba Station and on March 9 at Port Limon.

Acknowledgments are gratefully made to the United Fruit Company, who gave me much advice and kindly treatment, including the placing at my disposal of a part of their shipping-room. Here, with excellent facilities and materials for packing, I was able to prepare my specimens for shipment with great success. Mention should also be made of a provision made for me by Mr. Musgrove, Superintendent of the Electric Lighting Plant of Port Limon. In a warm, dry place near the boilers I was allowed to dry perfectly several hundred skins. The humid conditions at the coast made the drying of these skins impossible without the aid of artificial heat.

I also gratefully acknowledge courtesies extended to me by the Northern Railway of Costa Rica. They placed at my disposal transportation facilities which allowed me the fullest possible use of their lines. Mr. Donaldson, the United States Consul at Port Limon, has also my grateful appreciation for services rendered.

Finally, I wish to thank Mr. Ridgway and others at the National Museum, who kindly assisted me in the identification of several puzzling species.

Ardeidae.

Tigrisoma excellens Ridg.

1 specimen said to have been taken at Juan Vinas, near Turrialba Station. The skin was given to me. It is an immature bird (sex?).

Falconidae.

Buteo platypterus (Vieill.).

2 specimens. ♀ ad. Coliblanco. February 11; ♀ im. Port Limon, March 9.

Micrastur interstes Bangs.

1 specimen. ♂ ad. Guayabo.

This specimen is referred to the above form recently described by Bangs, as it occurs within the range allotted to the new species, in fact not far from Cartago, the type locality. The bird was perched at the edge of a small clearing in a dense forest and allowed a close approach. The stomach contained hair of a small mammal.

Falco sparverius *Linn.*

5 specimens. Guayabo 3 ♀, 1 ♂; Coliblanco 1 ♂.

These specimens are easily referable to the eastern form. This species was common about Guayabo.

Cracidae.**Chamaepetes unicolor** *Salv.*

2 specimens. Volcan de Turrialba 2 ♀. Quite common in the deep heavily-wooded ravines about the volcano at timber-line. The bare skin in front of the eyes is ultramarine in life. These birds are favorite game birds. Their flesh is white and finely flavored. While walking at the bottom of a rocky gorge densely wooded on either side, I was attracted by an uncanny, indescribable sound. It might have been a partridge drumming a great distance away, but it evidently came from close at hand. At length I made out a big, black bird in the shrubbery hanging from the steep side of the ravine. At the report of my gun the bird fell and another flew towards me and alighted a few feet away. These birds appeared to have little fear of man.

Ortalis cinereiceps *(Gray)*.

5 specimens. 3 ♂, 1 ♀, 1 sex (?). They were common upon the heavily wooded hillsides marking the course of Guayabo Creek. They were usually met in small bands and were quite fearless. When compared with specimens in this Museum the Guayabo birds are seen to possess darker heads and more richly colored breasts — deeper olivaceous brown. This possibly may be due to the excellent condition of plumage which the birds are in. The birds are known by the widely-used name of Chachalaca.

Rallidae.**Aramides albiventris plumbeicollis** *Zeledon.*

1 specimen. Guayabo ♂. Compared with a specimen from Costa Rica the Guayabo bird is typical. This bird was taken by the side of a tiny stream flowing down a hillside through an open forest. No others were seen.

Columbidae.

Columba flavirostris Wagl.

3 specimens. Guayabo ♂. These birds were abundant about the potrero, where they resorted to dead branches of the tallest trees during the sunny mornings. At such time their loud cooing could be heard anywhere. They roost in the heavy foliage of tall trees. They feed upon wild fruits, their crops being frequently distended with large, succulent berries. (Native name = "Berengena.") They are rather shy birds and are known among the natives as "Paloma," the common name for pigeon.

Columba albilinea crissalis Salv.

4 specimens. Vol. de Turrialba ♂. These birds were abundant in the open forest about the lecheria. What impresses the stranger most is the exceedingly loud flapping of their wings, just as they launch into flight. They have a habit of remaining perfectly quiet, well hidden in the foliage, and fly only when the hunter is beneath the tree. This sudden, loud wing-beating is then often quite startling.

Columba nigrirostris Scl.

1 specimen. Guayabo ♂. Apparently much rarer than *C. flavirostris* with which it was associated.

Cuculidae.

Piaya cayana thermophila (Scl.).

4 specimens. Guayabo 1 ♂, 2 ♀; Coliblanco 1 ♂.

This bird was common at Guayabo, where it resorted to the dense shrubbery. Its habit of running along branches like a squirrel was observed several times. It effects its escape in this way frequently. When alarmed, though, the bird usually seeks safety by remaining perfectly quiet. At Coliblanco the birds were observed several times in the tops of high trees.

Crotophaga sulcirostris Swains.

10 specimens. Guayabo 3 ♂, 4 ♀; Coliblanco 1 ♀; Turrialba Station 2 ♀.

These birds are abundant in the lowlands of Costa Rica, becoming scarcer at higher altitudes. At Guayabo they were abundant, but only 3 or 4 were seen at Coliblanco.

Psittacidae.

Conurus finschi *Salv.*

1 specimen. Guayabo ♂. Screaming flocks of these were of frequent occurrence. This specimen has no sign of red on the head, but it has the red under wing-coverts of *finschi*.

Amazona salvini (*Salvad.*).

2 specimens. Guayabo 1 ♂, 1 ♀. When these specimens are compared with a series they show themselves brighter and lighter colored, with the under side of the tail bright grass green. The other specimens have tails strongly tinged with golden yellow.

This handsome species was abundant about Guayabo, flying about and feeding in large flocks. In some cases, however, the birds were seen going in pairs. As commonly true among parrots when mated, each individual of a pair shows great devotion to the other, refusing to leave the site where its mate has been killed. These birds were very shy, and often eluded the collector by keeping perfectly quiet while hidden in the foliage.

Pionus senilis (*Spix*).

2 specimens. Guayabo ♂, ♀. This pair was secured from the top of a tree at one shot. Dissection showed active sexual organs.

Pionopsittacus hæmatotis (*ScL. & Salv.*).

5 specimens. Guayabo ♂, ♀; Coliblanco 2 ♂, 1 ♀.

These birds were usually seen in pairs, each bird of which manifested the greatest attachment for the other. A favorite habit of the birds was to perch on a high dead branch and sun themselves for an hour or longer.

Momotidae.

Momotus lessoni (*Less.*).

1 specimen. Guayabo ♀.

Prionornis platyrhynchus minor *Hart.*

1 specimen. Guayabo ♀.

• Trochilidae

Heliothrix barroti (*Bourc. & Muls.*).

1 specimen. Guayabo ♂. Several of these strikingly colored birds were seen, but they were not common.

Hemistephania veraguensis (*Salv.*).

2 specimens. Coliblanco 2 ♀.

Thalurania columbica venusta (*Gould*).

11 specimens. Guayabo 9 ♂, 2 ♀.

Very common about stubs grown with flowering vines. Dissection showed birds were breeding or about to breed.

Elvira nigriventris (*Lawr.*).

1 specimen. Coliblanco ♂.

Eupherusa egregia *Scl. & Salv.*

3 specimens. Coliblanco 1 ♂, 2 sex?.

Panterpe insignis *Cab. & Heine.*

14 specimens. Vol. Turrialba 9 ♂, 4 ♀, 1 sex?.

This humming-bird was one of the characteristic birds of the forest growing at the base of the Ash-cone. The abundance of flower-bearing trees and vines made the open forest about the lecheria an ideal humming-bird locality. The males were constantly engaged in combat, performing some amazing antics while on the wing. This species was breeding at this season. A fully formed yolk was found in one female, while two others showed ovaries at the height of activity. This species was noticeable for the frequency with which it resorted to perching and the length of time it spent in this position.

Amazilis tzacatl (*Llave*).

14 specimens. Guayabo, 10 ♂, 2 ♀; Fort Limon, 1 ♀, 1 sex?.

A male taken at Guayabo on January 30 had testes in a state of activity, and a female taken at the same place on January 27 showed active ovaies.

Eugenes spectabilis (*Lawr.*).

2 specimens. Coliblanco, 2 ♀.

Phæthornis guy coruscus *Bangs.*

1 specimen. Coliblanco ♀.

Oreopyra calolæma *Salv.*

6 specimens. Coliblanco 4 ♂, 1 ♀, 1 sex?.

These birds were common about a flowering vine completely enclosing a huge tree trunk. Few or none were seen elsewhere. The above tree stood isolated in the potrero, or pasture.

Heliodoxa jacula henryi (*Lawr.*).

9 specimens. Coliblanco 5 ♂, 4 ♀. One female is in moulting plumage. These birds, with the preceding species, were common about the tree referred to.

Selasphorus torridus *Salv.*

10 specimens. Vol. de Turrialba 9 ♂, 1 sex?.

This bird was common about the park-like forest, adjacent to the lecheria, and with the exception of *Junco vulcani* was the only bird found near the summit of the volcano. This hummer followed the vegetation to its limit.

Micropodidæ.

Chætura gaumeri *Lawr.*

2 specimens. Guavabo ♂, ♀. Common.

Trogonidæ.

Pharomacrus mocinno costaricensis (*Cab.*).

7 specimens. Coliblanco 1 ♀. Vol. de Turrialba 2 ♂, 4 ♀.

In the heavy forest at the base of the Ash-cone the Quezal was common, though one unacquainted with its habits might never see one. It frequents the dense forests and when in the shade of heavy foliage its brilliant colors are surprisingly inconspicuous. The birds are of a very retiring disposition and seldom betray their whereabouts by any sound. The male, however, has a low plaintive

whistle which is occasionally heard. The natives imitate this note and lure the birds to their destruction. The females are much oftener seen than the males.

A nest of this species was found in a dead stump standing in a partially cleared forest. The female's head was seen protruding from a hole about the size of a flicker's and some 12 feet from the ground. While we were in the vicinity of the nest the male bird came flying rapidly by, his beautiful tail plumes streaming behind in a most graceful and striking manner. He alighted upon a dead limb about 30 feet away in the full sunlight, and where his colors shone in all their glory. The two males observed — both were collected — sat with their backs toward the observers. They never showed a sign of the brilliant red breast. A boy climbed to the nest above referred to, but reported that it was empty.

***Trogon puella* Gould.**

2 specimens. Guayabo 2 ♀. These birds frequent large heavily foliated trees, which usually bear fruit upon which the birds feed. A round fruit with a thick rind appeared to be a favorite.

***Trogon caligatus* Gould.**

4 specimens. Guayabo 4 ♂.

***Trogon massena* Gould.**

1 specimen. Guayabo ♂.

This bird is noticeably blue on the rump, but on comparison with a large series in the U. S. National Museum this peculiarity was shown to be merely a case of individual variation.

Galbulidae.

***Galbula melanogenia* Scl.**

1 specimen. Guayabo, sex?. Found in heavily wooded portion of forest sitting perfectly motionless on a branch.

Capitonidae.

***Semnornis frantzii* (Scl.).**

6 specimens. Coliblanco 2 ♂, 4 ♀. This very odd bird was common in trees studding the potrero about the farm house, and was

met in low situations at the edges of ravines. It feeds in small flocks, climbing clumsily about the branches. It shows practically no fear of man, and three or four can be collected from a single tree.

Rhamphastidae.

Rhamphastos brevicarinatus *Gould.*

3 specimens. Guayabo 2 ♂, 1 ♀.

Common about edges of heavy forest, and in fruit-bearing trees — usually in small bands. They spend much time sitting motionless on a limb in the dense shade during the heat of the day. Frequently they are betrayed only by the brilliant lemon-yellow throat patch. This stands out in bold relief and seems utterly detached from the bird. It might be a yellow leaf or a piece of hanging fruit.

Pteroglossus torquatus (*Gmelin*).

5 specimens. Guayabo 4 ♂, 1 ♀.

Common. Usually in flocks. When one of their number is shot, the whole flock will remain in the vicinity, and as many as six or seven individuals can thus be secured. Testes of one male showed approaching activity.

Aulacorhamphus cæruleigularis *Gould.*

15 specimens. Guayabo 4 ♂, 3 ♀; Coliblanco 6 ♂, 2 ♀. Common in small flocks feeding on fruits. It is sluggish and unwary. At Guayabo it was found roosting in the tops of very high trees.

Picidae.

Campephilus guatemalensis (*Hart.*).

1 specimen. Guayabo ♂. This specimen was the only one seen.

Dryobates villosus extimus *Bangs.*

7 specimens. Coliblanco 4 ♂, 1 ♀; Vol. de Turrialba 1 ♂, 1 ♀. Common at Coliblanco, less so at base of Ash-cone.

Sphyrapicus varius (*Linn.*).

2 specimens. Coliblanco ♀ February 13, ♀ February 15. One of these birds was moulting. Others were seen.

Centurus pucherani (*Malh.*).

8 specimens. Guayabo 4 ♂, 3 ♀; Port Limon 1 ♂.

These handsome woodpeckers were abundant at Guayabo. Not observed at Coliblanco or farther up the volcano.

Centurus hoffmanni *Cab.*

5 specimens. Guayabo 3 ♂, 2 ♀. Common.

Chloronerpes simplex *Salv.*

1 specimen. Guayabo ♀.

Chloronerpes yucatanensis (*Cabot*).

4 specimens. Guayabo 1 ♂, 3 ♀.

Tyrannidae.**Copurus leuconotus** *Lafr.*

1 specimen. Guayabo ♂. Shot from the top of a tall tree.

Rhynchocyclus cinereiceps (*Scl.*).

1 specimen. Guayabo.

Todirostrum cinereum finitimum *Bangs.*

6 specimens. Guayabo 6 ♂. Common in underbrush and at edges of clearings.

Lophotriccus squamæcristatus minor *Cherrie.*

1 specimen. Guayabo.

Leptopogon superciliaris *Cabanis.*

1 specimen. Guayabo ♂.

Myiopagis placens accola *Bangs.*

1 specimen. Guayabo ♀.

Tyranniscus vilissimus parvus (*Lawr.*).

5 specimens. Guayabo 2 ♂; Coliblanco 1 ♂, 2 ♀. Testes showed approaching activity.

Elania martinica subpagana (*Scl. & Salv.*).

1 specimen. Guayabo ♀.

***Elænia frantzii* Lawr.**

5 specimens. Coliblanco 1 ♂; Vol. de Turrialba 4 ♂.

***Myiozetetes granadensis* Lawr.**

5 specimens. Guayabo 1 ♂, 3 ♀, 1 sex?.

***Myiozetetes texensis* (Giraud).**

8 specimens. Turrialba Station 1 ♂; Guayabo 3 ♂, 4 ♀.

Common about banana plantation near house.

***Megarynchus pitangua mexicanus* (Lafr.).**

8 specimens. Guayabo 1 ♂, 5 ♀; Port Limon 1 ♂, 1 ♀.

These birds have a loud, spirited call, which they utter in chorus at daybreak. During the day they frequent dead treetops.

***Myiodynastes hemichrysus* (Cab.).**

7 specimens. Coliblanco 3 ♂, 4 ♀.

***Terenotriccus erythrurus fulvicularis* (Salv. & Godman).**

1 specimen. Guayabo ♀.

***Mitrephanes aurantiiventris* (Lawr.).**

8 specimens. Coliblanco 7 ♂, 1 ♀.

Common in shrubbery and at edges of ravines.

***Empidonax flaviventris* (Baird).**

4 specimens. Guayabo 2 ♀, 1 ♀, 1 sex?. Dates: January 28, February 3, February 4 (2).

***Empidonax flavescens* Lawr.**

20 specimens. Coliblanco 13 ♂, 6 ♀, 1 sex?.

***Empidonax atriceps* Salv.**

18 specimens. Coliblanco 1 ♂, 3 ♀. Vol. Turrialba 9 ♂, 3 ♀, 2 sex?.

***Myiochanes lugubris* (Lawr.).**

2 specimens. Coliblanco ♂, ♀. In open forest of tall trees.

***Nuttallornis borealis* (Swains.).**

1 specimen. Guayabo ♀. January 31.

Myiarchus lawrenceii bangsi *Nelson*.

14 specimens. Turrialba Station, 1 sex?; Guayabo 8 ♂, 4 ♀, 1 sex?.

Tyrannus melancholicus satrapa (*Cab. & Heine*).

12 specimens. Guayabo 7 ♂, 5 ♀.

A very common bird about plantations and in the vicinity of dwellings.

Muscivora tyrannus (*Linn.*).

3 specimens. Guayabo 3 ♂. Not common.

Pipridæ.**Corapipo leucorrhoa altera** *Hellmayr*.

1 specimen. Guayabo ♂, in immature plumage.

Cotingidæ.**Tityra semifasciata costaricensis** *Ridg.*

7 specimens. Guayabo 4 ♂, 3 ♀.

Tolerably common in flocks of three and four on heavily wooded slopes.

Pachyrhamphus versicolor costaricensis *Bangs*.

1 specimen. Coliblanco 1 ♂.

Pachyrhamphus cinnamomeus *Lawr.*

2 specimens. Guayabo, 1 ♂, 1 ♀.

Erator albitorques (*Du Bus*).

1 specimen. Guayabo ♂.

Procnias tricarunculata (*J. and E. Verreaux*).

8 specimens. Vol. de Turrialba 7 ♂, 1 sex?.

Abundant in the heavy forest about the base of the Ash-cone. They are seldom seen, but their remarkable notes are heard with great frequency through the greater part of the day. A native showed me a successful way of hunting these birds. It consisted in going into a heavily shaded portion of the forest and remaining per-

fectly quiet. After a long wait, we began to get glimpses of the birds in the heavy foliage, and soon a bird flew to a branch in plain view. Most of the above 8 specimens were secured in this way. The native name of this bird is "Calandria."

Dendrocolaptidae.

Synallaxis pudica *Scl.*

2 specimens. Guayabo 2 ♂. Frequents low thickets.

Siptornis erythrops (*Scl.*).

1 specimen. Guayabo ♂.

Pseudocolaptes lawrencei *Ridg.*

2 specimens. Vol. de Turrialba.

Automolus cervinigularis hypophæus *Ridg.*

1 specimen. Guayabo ♂.

Xenicopsis subalaris lineatus (*Lawr.*).

1 specimen. Coliblanco ♂. This species appears to vary greatly in the amount of rufous on the nape and on the throat and breast.

Xenops genibarbis *Ill.*

1 specimen. Guayabo ♂. The testes of this bird were active.

Xenops rutilus *Licht.*

1 specimen. Guayabo ♂. Testes showed recent or approaching activity.

Premnoplex brunnescens (*Scl.*).

3 specimens. Guayabo, ♀; Coliblanco ♂, ♀.

Margarornis rubiginosa *Lawr.*

9 specimens. Coliblanco 2 ♂, 1 ♀; Vol. de Turrialba 2 ♂, 4 ♀.

These birds were very common in the open park-like forest at the base of the Ash-cone.

Dendroornis nana costaricensis (*Ridg.*).

1 specimen. Guayabo ♀.

Xiphocolaptes emigrans costaricensis Ridg.

1 specimen. Guayabo ♀.

Picolaptes affinis (Lafr.).

15 specimens. Coliblanco 5 ♂, 4 ♀, 1 sex?; Vol. de Turrialba 2 ♂, 3 ♀.

This is one of the most characteristic birds about the volcano.

Picolaptes compressus (Cab.).

4 specimens. Guayabo 2 ♂, 1 ♀; Port Limon 1 ♂.

Formicariidae.**Cymbilanius lineatus fasciatus** Ridg.

2 specimens. Guayabo ♀, 1 sex?.

Found in tree tops in dense low forests.

Thamnophilus doliatus mexicanus Allen.

1 specimen. Guayabo ♂.

Dysithamnus mentalis septentrionalis Ridg.

5 specimens. Guayabo 5 ♀.

Cercomacra tyrannina crepera Bangs.

1 specimen. Guayabo ♂.

Pteroptochidae.**Scytalopus argentifrons** Ridg.

1 specimen. Coliblanco ♂. In deep, jungle-grown ravine, I heard the bird's sharp, scolding note and remained perfectly quiet. The curiosity of the bird led it to within a few feet of me.

Turdidae.**Catharus gracilirostris** Salv.

11 specimens. Vol. de Turrialba 5 ♂, 2 ♀; Coliblanco 3 ♂, 1 ♀.

Common among fallen trees and shrubbery. Like a small *Hylodichla* in general behavior.

***Myadestes melanops* Salv.**

4 specimens. Coliblanco 3 ♂, 1 ♀.

This very retiring bird was occasionally seen in ravines and in dense patches of shrubbery.

***Planesticus grayi casius* (Bonap.).**

4 specimens. Guayabo 2 ♂, 2 ♀. These birds roosted in the tops of very high trees, coming from all directions at evening time.

***Planesticus plebejus* (Cab.).**

24 specimens. Coliblanco 18 ♂, 4 ♀; Vol. de Turrialba 2 ♂.

This species was a characteristic bird about the potrero at Coliblanco. They came in large numbers to fruit-bearing trees. The plumage is very loosely embedded in the skin. The birds have a call note like our American robin.

***Planesticus nigrescens* (Cab.).**

14 specimens. Vol. de Turrialba 9 ♂, 5 ♀.

This species was abundant in the open forest at base of Ash-cone. It is very robin-like in character, and not as shy as the two preceding species.

Troglodytidae.

***Heleodytes zonatus costaricensis* (Berl.).**

15 specimens. Guayabo 4 ♂, 6 ♀, 1 sex?; Coliblanco 1 ♂, 3 ♀.

This bird seemed to be in every conceivable sort of bird haunt. It was as much at home among the tops of the tallest trees as in low shrubbery or about fallen trees. Its favorite spot, however, is probably in densely clustered vines growing about tree trunks.

***Troglodytes musculus intermedius* (Cab.).**

15 specimens. Guayabo 4 ♂, 5 ♀; Coliblanco 5 ♂, 1 ♀.

This series, all taken upon the Atlantic slope, is identical with a specimen taken in San José, the type locality of the species. These birds were common in haunts usually frequented by wrens, but also

showed a decided fondness for patches of tall grass. They were frequently flushed from such places, after the manner of the marsh wren.

Troglodytes ochraceus *Ridg.*

3 specimens. Coliblanco ♂, ♀; Vol. de Turrialba ♂.

This spry little wren was found about logs and hollow trees standing in open places.

Henicorhina prostheleuca pittieri (*Cherrie*).

1 specimen. Guayabo ♀.

Thryophilus thoracicus (*Salv.*).

2 specimens. Guayabo 1 ♀, 1 sex?.

Sylviidae.

Polioptila superciliaris magna *Ridg.*

4 specimens. Guayabo 1 ♂, 1 ♀, 2 sex?.

Hirundinidae.

Progne chalybea (*Gmelin*).

2 specimens. Guayabo ♂, ♀.

Stelgidopteryx salvini *Ridg.*

1 specimen. Guayabo ♀. Shot from a flock, probably of the same species.

Ptilogonatidae.

Ptilogonys caudatus *Cab.*

10 specimens. Vol. de Turrialba 4 ♂, 6 ♀.

This handsome bird was one of the characteristic species of the open forests about the volcano. Its habits are flycatcher-like. The species was breeding.

Phainoptila melanoxantha *Salv.*

5 specimens. Vol. de Turrialba 5 ♂.

A retiring species loving heavy foliage.

Vireonidae.

Vireosylva philadelphica *Cass.*

3 specimens. Guayabo 2 ♂, Feb. 1 to Feb. 4; Port Limon ♀, Mar. 9.

Vireosylva josephæ costaricensis *Ridg.*

1 specimen. Coliblanco ♂.

Lanivireo flavifrons (*Vieill.*).

1 specimen. Guayabo ♂, February 4.

Vireo carmioli *Baird.*

4 specimens. Coliblanco 2 ♂, 1 ♀; Vol. de Turrialba 1 ♂.

Cyclarhis flavipectus subflavescens (*Cab.*).

1 specimen. Coliblanco ♀.

Corvidæ.

Psilorhynchus mexicanus cyanogenys (*Sharpe*).

6 specimens. Guayabo 1 ♂, 4 ♀; Coliblanco 1 ♂.

This noisy jay was very common at Guayabo, but less so at Coliblanco. They usually rove about in small bands (5 to 10) screaming a great deal. They are magpie-like in habits, and often visit the vicinity of dwellings.

Certhiidae.

Diglossa plumbea *Cab.*

24 specimens. Coliblanco 10 ♂, 6 ♀; Vol. de Turrialba 5 ♂, 3 ♀.

This interesting little bird haunted vine-hung trees, many individuals being found together. It is very active, flitting quickly from twig to twig and keeping almost constantly in the deep shade. Occasionally one will fly out and hover in front of a flower after the manner of a humming-bird. The natives sometimes refer to this bird as "Azul." The males look quite blue in the sunlight. One female had been incubating.

Chlorophanes spiza guatemalensis (Scl.).

4 specimens. Guayabo 2 ♂; Port Limon 1 ♂, 1 ♀.

Dacnis venusta Lawr.

1 specimen. Guayabo ♂.

Cœreba mexicana (Scl.).

3 specimens. Guayabo 2 ♀, 1 ♂ im.

Tolerably common about plantations. Ovaries of one female active.

Mniotiltidae.**Mniotilta varia** (Linn.).

3 specimens. Guayabo 1 ♂, Jan. 20; Port Limon 1 ♀, Mar. 9; Coliblanco 1 ♂, Feb. 19.

Helmintheros vermivorus (Gmelin).

1 specimen in fine plumage. Guayabo ♂, January 24.

Vermivora peregrina (Wilson).

18 specimens. Guayabo 8 ♂, 5 ♀, 1 sex?; Turrialba Station 1 ♀; Vol. de Turrialba 1 ♂, 1 sex?; Port Limon 1 ♀.

This species was the commonest North American bird met in the tropics. At Guayabo it was profusely abundant. A male taken at Guayabo on January 16 was undergoing an extensive moult.

Vermivora chrysoptera (Linn.).

4 specimens. Guayabo 3 ♂, 1 ♀.

Tolerably common at edges of deeply wooded ravines. In full spring plumage.

Oreothlypis gutturalis (Cab.).

8 specimens. Coliblanco 4 ♂, 1 ♀. Vol. de Turrialba 3 ♂.

Found among outer branches of high trees. The lower limit of its range was 1,000 feet above Coliblanco.

Compsothlypis pitiayumi speciosa Ridg.

8 specimens. Guayabo 3 ♂, 3 ♀, 1 sex?; Coliblanco 1 ♂.

The habits of this bird are very like those of the Parula warbler.

Dendroica magnolia (Wilson).

1 specimen. Guayabo ♀, January 16.

***Dendroica coronata* (Linn.).**

3 specimens. Guayabo 2 ♂, 1 ♀, January 20, 23.

***Dendroica virens* (Gmelin).**

7 specimens. Coliblanco 1 ♂, February 20, 3 ♀ Feb. 9, 13, 22; Vol. de Turrilaba 3 ♂, Feb. 25, 26, 27.

***Dendroica fusca* (Mull.).**

6 specimens. Guayabo 1 ♂, Jan. 24, 3 ♀, Feb. 4, 5, 1 sex? Jan. 23; Coliblanco 1 ♂, Feb. 22. Only one male in full spring plumage.

***Dendroica pensylvanica* (Linn.).**

13 specimens. Guayabo ♂, January 16, 17, 25, 26, 30, February 1, ♀ January 27, 20, 24, 28, February 4, 1; Port Limon ♀, Mar. 9.

But one of these specimens has the fully adult plumage—a male taken at Guayabo January 25.

***Oporornis philadelphia* (Wilson).**

1 specimen. Guayabo ♂, February 4.

***Geothlypis trichas* (Linn.).**

1 specimen. Guayabo ♂ im., January 27.

***Geothlypis semiflava bairdi* (Nutting).**

2 specimens. Guayabo 1 ♂, 1 sex?.

***Wilsonia pusilla* (Wilson).**

5 specimens. Guayabo ♂, January 20, ♀ January 28, January 28, sex? January 25, January 26.

These specimens are quite easily referable to the above species. It is noteworthy that all specimens of *pusilla* were taken below 4,000 feet, they apparently not mingling with *pileolata*, the bird found at higher elevations. Bangs records *pusilla* from northwestern Costa Rica, and implies in his remarks concerning it that it is a bird occurring at lower levels than *pileolata**.

***Wilsonia pusilla pileolata* (Pallas).**

35 specimens. Coliblanco 15 ♂, 8 ♀, 5 sex?; Vol. de Turrialba 3 ♂, 1 ♀, 3 sex?.

These birds were profusely abundant about the potrero at Coliblanco. They were in all conceivable situations, and frequently

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uttering their sharp sparrow-like note. About the volcano they were less common. This is evidently a bird of high altitudes while within its winter range. See remarks on preceding species.

***Setophaga ruticilla* (Linn.).**

4 specimens. Guayabo 3 ♂, Jan. 16, Feb. 1, 1 ♀ Jan. 28.

Common while migrating. Males in fully adult plumage.

***Myioborus aurantiacus* (Baird).**

19 specimens. Guayabo 2 ♂, 2 ♀, 1 sex?; Coliblanco 10 ♂, 4 ♀.

Haunts shrubbery. Redstart-like in habits.

***Myioborus torquatus* (Baird).**

8 specimens. Coliblanco 3 ♂, 4 ♀; Vol. de Turrialba 1 sex?.

Occurs at edges of deep ravines, in shrubbery, about fallen logs, etc. Very sprightly and pretty. This and the preceding are quite similar in habits.

***Basileuterus rufifrons delatirii* (Bonap.).**

9 specimens. Guayabo 5 ♂, 3 ♀, 1 sex?.

These birds show a decided grayness at the back of the neck, but comparison with a series in the National Museum shows this feature to be largely a matter of individual variation.

***Basileuterus melanogenys* Baird.**

4 specimens. Coliblanco 2 ♂; Vol. de Turrialba 2 ♂.

These birds were met at the edges of heavy forests. They live near the ground and are somewhat wren-like in habits.

***Basileuterus culicivorus godmani* Berlep.**

1 specimen. Guayabo ♂.

Tangaridae.

***Chlorophonia callophrys* (Cab.).**

4 specimens. Guayabo 1 ♂; Coliblanco ♂, ♀; Vol. de Turrialba ♂.

In heavy foliage of tree-tops.

***Euphonia luteicapilla* (Cab.).**

1 specimen. Guayabo ♂.

Euphonia gouldi *Scl.*

1 specimen. Guayabo ♂.

Calospiza icterocephala (*Bonap.*).

1 specimen. Guayabo ♀.

Calospiza guttata chrysophrys (*Scl.*).

1 specimen. Guayabo ♀.

Calospiza gyroloides (*Lafr.*).

2 specimens. Guayabo 2 ♂.

These birds usually keep well hidden among the heavily foliated tree-tops.

Calospiza dowii (*Salv.*).

7 specimens. Coliblanco 5 ♂, 2 ♀.

Common in palms, usually going about in two's and three's.

Calospiza larvata fanny (*Lafr.*).

4 specimens. Guayabo 1 ♂, 1 ♀; Port Limon 1 ♂, 1 ♀.

Frequents palm-trees.

Tangara cana *Swains.*

6 specimens. Guayabo 4 ♂, 1 ♀; Port Limon 1 ♀.

Common in tops of trees standing in clearings. At night roosts in tops of tallest trees. In daytime visits banana plantations. It is shy and easily alarmed.

Piranga rubra (*Linn.*).

8 specimens. Guayabo 2 ♂ in full plumage, 1 ♀, 3 sex? im.; Coliblanco 1 ♂ im., 1 ♀.

Common. Usually in trees bearing wild berries and fruits.

Piranga bidentata sanguinolenta (*Lafr.*).

5 specimens. Coliblanco ♂.

These birds are very richly colored in comparison with another series in the Field Museum collection.

Ramphocelus passerinii *Bonap.*

10 specimens. Guayabo 6 ♂, 1 ♀, 1 ♂ im.; Port Limon, 1 ♂, 1 ♀.

This handsome tanager was common in shrubbery and about plantations. At this time a male and female were usually found together.

***Chlorospingus regionalis* Bangs.**

18 specimens. Coliblanco 12 ♂, 6 ♀.

In company with *C. pileatus* and much like it in habits.

***Chlorospingus pileatus* Salv.**

26 specimens. Coliblanco 11 ♂, 1 ♀; Vol. de Turrialba 9 ♂, 5 ♀.

The most abundant bird about Coliblanco, and nearly as common at base of Ash-cone. They are ubiquitous, scarcely a bird haunt seems without them. Shrubbery and vine-covered trees are their favorite places.

***Chlorospingus olivaceiceps* Underwood.**

2 specimens. Guayabo 2 ♂.

Icteridae.***Zarhynchus wagleri* (Gray).**

3 specimens. Turrialba Station 1 ♀; Guayabo ♂; Coliblanco ♀.

Common at Turrialba Station but not elsewhere.

***Gymnostinops montezuma* (Less.).**

9 specimens. Guayabo 4 ♂, 4 ♀, 1 sex?

Abundant at Guayabo but not positively identified elsewhere. No nesting site was discovered and dissection showed the birds were not breeding. They roved about in large, noisy bands. Their great variety of notes is absolutely indescribable. Screeches, grunts, groans and whistles all can be recognized in the discord emanating from a flock. This species and the preceding possess a peculiar strong, musky odor.

***Icterus prosthemelas* (Strickland).**

1 specimen. Guayabo ♂.

This specimen was taken in a vine-covered stub standing in the heavy forest.

***Icterus galbula* (Linn.).**

3 specimens. Guayabo ♂, moulting into the fully adult plumage; ♂ immature; ♀ in winter plumage. Dates: January 16, February 5, February 5.

***Sturnella magna inexpectata* Ridg.**

5 specimens. Guayabo 4 ♂, 1 ♀.

Common on the potrero. The birds were remarkably silent for meadow-larks. Their notes were seldom heard. They had a habit of making short flights and dropping into the long grass. Here they would flush only when the collector was one or two steps away.

Fringillidae.

***Spiza americana* (Gmelin).**

1 specimen. Guayabo ♂, January 20.

***Junco vulcani* (Boucard).**

4 specimens. Vol. de Turrialba 2 ♂, 2 ♀.

These birds were common on and slightly below the summit (11,000 ft. approx.). They found shelter in some green bushes growing close to the trickles of water issuing from the sides of the crater. They were the only birds upon the summit of this volcano.

***Brachyspiza capensis peruviana* (Less.).**

24 specimens. Coliblanco 12 ♂, 6 ♀; Vol. de Turrialba 5 ♂, 1 ♀.

Wanders about shrubbery in small troops. This bird was not breeding. In its fondness for the vicinity of human dwellings and in many of its habits this bird resembles the slate-colored junco. The Costa Rica species has a pleasing song.

***Arremonops conirostris richmondi* Ridg.**

4 specimens. Guayabo 3 ♂, 1 ♀.

***Atlapetes gutturalis* (Laf.).**

1 specimen. Coliblanco ♂.

***Pselliophorus tibialis* (Lawr.).**

12 specimens. Coliblanco 3 ♂, 4 ♀; Vol. de Turrialba 3 ♂, 2 ♀.

This bird frequents thickets in clearings and at the edge of forests. It is usually found flitting about brush-piles, fallen trees and in a great variety of places, exploring each place thoroughly. However, it never goes but a short flight from the heavy forest shade. The bright yellow thigh patches may be for the purpose of protectively disguising the bird. Once while looking toward a large fallen tree, in which

Several cave-like spaces, I saw what appeared to be a small, brown moth flitting about in one of these spaces. A moment later I was surprised to see a bird of the above species hop into view. The supposed wings of the moth were in reality the yellow thigh patches of this bird.

Pezopetes capitalis *Cab.*

2 specimens. Vol. de Turrialba 1 ♀, 1 sex?.

Found in vine-hung tree-tops. It seldom ventured into open view.

Tiaris olivacea pusilla (*Swains.*).

9 specimens. Turrialba Station 2 ♀; Guayabo 2 ♂, 3 ♀; Coliblanco 3 ♂.

A very characteristic bird about plantations, by roadsides and in shrubbery at edges of clearings. Moves about in small flocks.

Sporophila corvina (*Scl.*).

2 specimens. Guayabo ♂; Port Limon ♀.

Not common.

Sporophila moreletii (*Bonap.*).

17 specimens. Turrialba Station 1 sex?, 1 ♂; Guayabo 7 ♂, 6 ♀, 1 sex?; Coliblanco 1 ♀.

There are no fully adult males in the above series.

A common bird in shrubbery and rank vegetation. The birds rove about in small flocks, and there is seldom more than one adult male seen among them — often not one.

Pheucticus tibialis *Baird.*

1 specimen. Coliblanco ♂.

This specimen and one other the only ones seen.

Saltator atriceps lacertosus *Bangs.*

1 specimen. Guayabo ♂.

These birds haunt shrubbery and are of a retiring disposition.

Saltator magnoides medianus *Ridg.*

5 specimens. Guayabo 4 ♀; Port Limon 1 ♂.

When compared with a series in the Field Museum collection the above five birds are practically identical with the series. They are undoubtedly *S. m. medianus*, notwithstanding the fact that two specimens have the black jugular color interrupted. This fact

might indicate that they belong with *S. m. intermedius*, the bird from Panama and Veragua, but in other characters they are typical of *medianus*, being darker gray on the forehead, and having the belly grayish rather than brownish. Moreover, the specimens in question are from a locality midway between the type localities of the above two races, and it is reasonable to expect that signs of intergradation might occur.

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DESCRIPTIONS OF TWENTY-EIGHT NEW
SPECIES AND SUBSPECIES OF
NEOTROPICAL BIRDS

BY

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CHICAGO, U. S. A.

May 31, 1913.

DESCRIPTIONS OF TWENTY-EIGHT NEW SPECIES AND SUBSPECIES OF NEOTROPICAL BIRDS

BY CHARLES B. CORY

***Nothocercus julius venezuelensis* subsp. nov.**

Type from Paramo de Tama (near source of the Tachira River), western Venezuela (close to the Colombian line), altitude about 7500 feet. Adult male, No. 43208, Field Museum of Natural History. Collected by W. H. Osgood, February 26, 1911.

Similar to *Nothocercus julius*, but general color brighter, forehead and sides of the head more rufous and nape darker; primaries blackish; lower part of throat or foreneck grayish and not vermiculated; breast clear tawny ochraceous, without vermiculation, the color decidedly more ochraceous than in *julius*; feathers of the flanks and thighs tipped with yellowish brown and narrowly barred with black, but the bars are broken and much narrower than in *julius*.

Length (skin), 305 mm.; wing, 190; culmen, 26; tarsus, 160.

***Eupsychortyx cristatus continentis* subsp. nov.**

Type from El Panorama, Rio Aurare (about fifteen miles east of Maracaibo), northwestern Venezuela. Adult male. No. 44088, Field Museum of Natural History. Collected by W. H. Osgood and S. G. Jewett, January 22, 1911.

Similar to *Eupsychortyx cristatus* of the islands of Curacao and Aruba, but larger and with black stripe on side of throat and black superciliary stripe much wider; middle of belly distinctly darker chestnut-rufous and with less black marking. The white markings on the feathers of the under parts largely replaced by pale buff; under tail coverts tawny rufous, becoming whitish buff on the edges and with conspicuous brownish black centers.

Wing, 104 mm.; tail, 75; tarsus, 30; culmen, 14.

***Urochroma costaricensis* sp. nov.**

Type from the vicinity of Limon, Costa Rica. Adult male. No.

44389, Field Museum of Natural History. Collected by H. F. Raven, May 23, 1910.

General color green, the under parts lighter and more yellowish especially on the throat; forehead and greater portion of crown, upper edges of lores, and a streak under the eye dull nopal red; the red of the crown separated from the eye by a narrow streak of dull green; concealed portions of the feathers of the crown yellow; cheeks bluish green; feathers of the nape and base of crown slightly tinged with yellowish olive; cubital edge of wing bluish black; bend of wing and outer primary coverts scarlet; outer portion of under wing coverts scarlet; inner portion bright canary yellow, but the greater feathers dull green like the inner edge of the under surface of the quills; quills black, all except the outermost one edged with green on the outer webs; scapulars and rump grass green; tail feathers yellow, edged with green on the outer webs; all the tail feathers with the exception of the two outer ones with a band of black at or very near the tips, the black band increasing in size towards the central feathers and not complete on the third, the two outer feathers tipped with green; the black band at the end of the middle tail feathers is separated from the yellow by a patch of green; shafts of rectrices brownish black; bill yellowish at the tip, dark at the base; feet dark (blackish in dried skin).

Total length (skin), 145 mm. (probably longer in life); wing, 120; tail, 52; tarsus, 10; culmen, 19.

The female is similar to the male, but differs in having less extent of red on the bend of wing and under wing coverts; the red of the forehead extends upon the lores, and the red spot below the eye is larger and extends further downward and backward; the green on the outer webs of outer primaries and on the shoulder is slightly tinged with bluish.

This very distinct species approaches nearest to *Urochroma dilactissima*, but may be distinguished at once by its red crown and other characters. Four specimens, 2 males and 2 females, were secured by Mr. Raven.

***Piaya cayana venezuelensis* subsp. nov.**

Type from Orope, Zulia, Venezuela. Adult female, No. 34589, Field Museum of Natural History. Collected by N. Dearborn, March 6, 1908.

Similar to *P. cayana cayana*, but having the general plumage decidedly darker; the upper parts deep rufous chestnut and the under parts more uniformly dusky.

Length (skin), 420 mm.; wing, 142; tail, 293; bill, 28; tarsus, 34.

This subspecies is readily distinguished from birds found in the dryer country about Rio Abrore, some 70 miles further north, the latter being apparently intermediate between *Piaya cayana cayana* and *P. cayana colombiana*.

***Momotus osgoodi* sp. nov.**

Type from El Guayabal (ten miles east of Cucuta), Colombia. Adult male, No. 43299, Field Museum of Natural History. Collected by W. H. Osgood and S. G. Jewett, March 17, 1911.

Similar to *Momotus swainsoni*, but differs in having the under parts darker and deeper chestnut, and absence of the bluish post ocular area (which is replaced by olive chestnut) and having the mantle and sides of the neck strongly tinged with chestnut and rest of back olive tinged with chestnut. The exposed portions of the feathers forming the nuchal cincture bordering the black crown patch are plain bluish purple without black tips. Color of wings, tail, and under wing coverts similar to *swainsoni*.

Wing, 127 mm.; tail, 167, the central feathers, 228; bill, 35; tarsus, 25.

This new species is named for Mr. W. H. Osgood, who collected the type specimen.

***Scytalopus magellanicus grandis* subsp. nov.**

Type from Tambo Ventija, ten miles east of Molinopampa, Peru (mountains about 30 miles northeast of Chachapoyas). Adult male, No. 44390, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, June 19, 1912.

Similar to *Scytalopus magellanicus magellanicus*, but much larger; entire plumage nearly uniform plumbeous black; the feathers of the crown and back slightly darker at the tips and those of the under parts slightly paler at the tips, noticeable when held in the light; bill brownish black; legs (in dried skin) dark brown.

Total length (skin), 167 mm.; wing, 78; tail, 60; bill, 15; tarsus, 30.

This bird approaches in size nearest to *S. femoralis* or *S. macropus*, but differs from either in having the plumage uniformly colored. It is darker and larger than *S. unicolor* and decidedly larger than *S. magellanicus magellanicus*, but apparently approaches it in color, and on account of lack of sufficient material for comparison I have provisionally considered it to be a large race of that species.

***Threnetes frazeri venezuelensis* subsp. nov.**

Type from Orope, Zulia, Venezuela (Southwest of Lake Maracaibo). Adult male, No. 44391, Field Museum of Natural History. Collected by N. Dearborn, March 10, 1908.

Similar to *Threnetes frazeri frazeri* from Colombia, but slightly darker and having the upper parts golden bronzy green (much less green than in *frazeri*) and the under parts slightly more buffy gray; iris dark brown; upper mandible black; under mandible yellowish; "feet flesh color."

Total length (skin), 115 mm.; wing, 56; tail, 41; bill, 30; tarsus, 3.

***Anthracothonax prevosti viridicordatus* subsp. nov.**

Type from El Panorama, Rio Aurare, Venezuela. Male, No. 43334, Field Museum of Natural History. Collected by W. H. Osgood, January 18, 1911.

Similar to *A. prevosti prevosti*, but differs in having the upper parts bright grass green (not golden green as in *prevosti prevosti* and more grass green than in *A. prevosti gracilirostris*) and the upper surface of middle tail feathers olive green; under tail coverts darker than in *gracilirostris*.

Length (skin), 118 mm.; wing, 68; tail, 36; bill, 26.

***Glaucis hirsuta fusca* subsp. nov.**

Type from Orope, Zulia, Venezuela. (Southwest of Lake Maracaibo.) Male, No. 43340, Field Museum of Natural History. Collected by N. Dearborn, March 7, 1908.

Similar to *G. hirsuta hirsuta*, but green of the upper parts darker and under parts decidedly darker, less rufous and more dusky.

Wing, 58 mm.; tail, 40; culmen, 31.

***Thaumastura cora montana* subsp. nov.**

Type from Hda. Llagueda (about twenty miles northeast of Otuzco). Peru, altitude about 7000 ft. Adult male, No. 44161, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, March 15, 1912.

Similar to *T. cora cora*, but having the upper parts clear green and not golden green; sides of the throat showing a tinge of purple (not blue as in *T. cora*); feathers on the sides of lower breast and flanks

largely with green centers; tail similar to that of *T. cora* but the dark marking blacker and the black tip showing a subterminal faint tinge of green.

Wing, 40 mm.; tail, 95; bill, 13.

***Laticauda rubiginosa* sp. nov.**

Type locality mountains east of Balsas, Peru. (On divide between Balsas and Leimabamba, altitude 10,000 ft.) Female, No. 44647, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, May 19, 1912.

Description. Upper parts, crown, and sides of head rich bronzy red; a small buffy white spot in front of and behind the eye. Throat buff, the feathers tipped with spots of metallic green; feathers of the breast and belly dull bronzy red (tinged with olive green in some lights), but having a mottled appearance as all the feathers are buffy white at the bases; sides of body strongly washed with bronzy red; under tail coverts rufous banded with black; wings purplish brown, the bend of the wing edged with rufous; under surface of retrices (except the outer web of outer feather) metallic green, outer web of outer tail feather blackish becoming pale at the tip; upper surface of retrices steel blue when held in the light, the outer feather tipped with buff on the outer web. Bill and feet black.

Total length (skin), 97 mm.; wing, 60; tail, 30; bill, 14.

The female described above was the only specimen taken.

***Galbula ruficauda brevirostris* subsp. nov.**

Type from Encontrados (southwest of Lake Maracaibo), Venezuela. Adult male, No. 43355, Field Museum of Natural History. Collected by N. Dearborn, February 11, 1908.

Similar to *Galbula ruficauda*, but bill decidedly shorter; tail shorter and color of the under parts averaging somewhat darker; the chestnut feathers of the tail are darker and the upper surface of the middle tail feathers less golden green.

Length (skin), 218 mm.; wing, 75; tail, 115; bill, 38.

The average measurements of 19 specimens from Encontrados and Catatumbo are as follows:

Eleven males — wing, 75 mm.; tail, 114; bill, 42.

Eight females — wing, 74 mm.; tail, 100; bill, 41.

This small, short-billed form seems to be confined to the low, heavily forested region in the vicinity of Encontrados and Catatumbo.

Chelidoptera tenebrosa pallida *subsp. nov.*

Type from Empalado Savannas, 30 miles east of Maracaibo, Venezuela. Male, No. 43380, Field Museum of Natural History. Collected by W. H. Osgood, April 7, 1911.

Similar to *C. tenebrosa tenebrosa*, but the chestnut abdomen paler. Black of the breast shading into slaty gray on lower part and separated from the rufous chestnut of the abdomen by a well defined band of white; cubital edge of wing tinged with rufous chestnut.

Length (skin), 148 mm.; wing, 112; tail, 58; culmen, 16.

Four specimens of this new subspecies are in the Field Museum collection and have been compared with sixteen examples of *C. tenebrosa tenebrosa* from British Guiana and Peru. Peruvian specimens apparently are not separable from those from British Guiana.

Picumnus venezuelensis *sp. nov.*

Type from Encontrados, Zulia, Venezuela. Male, No. 34631, Field Museum of Natural History. Collected by N. Dearborn, February 13, 1908.

Special characters. Approaches *P. cinnamomeus cinnamomeus*, but differs in being darker and having the under parts deeper chestnut; the anterior part of the forehead rufous chestnut, and no white spots on the posterior part of the crown.

Description. Back, rump and scapulars rufous brown; under parts darker, approaching rufous chestnut; nape and sides of the head dark like the under parts; frontal band rufous chestnut on anterior part, shading posteriorly into buff; crown black, the feathers broadly tipped with golden yellow nearly as in *cinnamomeus* but without white spots at the extreme hinder part as in that species; wings and tail as in *cinnamomeus*.

Length (skin), 97 mm.; wing, 53; tail, 33; bill, 12; tarsus, 12.

Phaethornis anthropilus fuscicapillus *subsp. nov.*

Type from Orope, Zulia, Venezuela. Adult female, No. 43343, Field Museum of Natural History. Collected by N. Dearborn, March 6, 1908.

Similar to *P. anthropilus anthropilus*, but crown darker brown (blackish brown); throat streaks darker and heavier; breast darker; back darker green and tips of feathers on lower back and rump more rufous buff.

Length (skin), 145 mm.; wing, 55; tail, 66; bill, 31.

Camptostoma pusillum tenuirostris *subsp. nov.*

Type from Rio Aurare (east of Maracaibo), Venezuela. Adult male, No. 43466, Field Museum of Natural History. Collected by W. H. Osgood, January 12, 1911.

Similar to *C. pusillum pusillum*, but differs in having a more slender and somewhat straighter bill; the back more olive and the yellow on the under parts brighter; tail feathers narrowly tipped with whitish and outer tail feather narrowly edged with the same.

Length (skin), 90 mm.; wing, 45; tail, 40; bill, 9.

Empidochanes zuliensis *sp. nov.*

Type from Orope, Zulia, Venezuela. Male, No. 43494, Field Museum of Natural History. Collected by N. Dearborn, March 12, 1908.

Somewhat similar to *Empidochanes cabinisi*, but much darker, more olive and under mandible brownish white. Back dark brownish olive, the feathers with concealed whitish shafts; crown dark brown, decidedly darker than the back; throat whitish, with a faint tinge of yellow; breast dusky olive; abdomen whitish, washed with pale greenish yellow; wings and tail similar to *E. cabinisi*, but slightly darker and the brownish tips of the wing coverts paler; upper mandible blackish; under mandible brownish white.

Length (skin), 128 mm.; wing, 68; tail, 60; bill, 13; tarsus, 12.

Inezia caudata intermedia *subsp. nov.*

Type from Rio Aurare (about 15 miles east of Maracaibo), Venezuela. No. 44161, Field Museum of Natural History. Collected by W. H. Osgood, January 17, 1911.

Similar to *Inezia caudata caudata*, but decidedly larger; the bill somewhat broader and the upper parts paler and more greenish olive; breast with slight wash of olive (not buffy); the chin whiter and the lores conspicuously pure white.

Length (skin), 115 mm.; wing, 53; tail, 52; bill, 10, tarsus, 17.

Attila rufipectus confinis *subsp. nov.*

Type from Orope, Zulia, Venezuela, Female, No. 44186, Field Museum of Natural History. Collected by N. Dearborn, March 12, 1908.

Similar to *A. rufipectus rufipectus*, but somewhat smaller and much

darker; the color of the upper parts deep rufous chestnut; throat and breast rufous chestnut; the chin paler, flanks more strongly tinged with orange brown; rump, wings and tail similar to *rufipectus*, but wing coverts orange brown; rump, wings and tail similar to *rufipectus*, but wing coverts tipped with darker rufous; upper mandible brownish black.

Length (skin), 168 mm.; wing, 77; tail, 74; culmen, 20; tarsus, 23.

***Thamnophilus doliatus dearborni* subsp. nov.**

Type from Encontrados, Zulia, Venezuela. Adult male, No. 43564, Field Museum of Natural History. Collected by N. Dearborn, February 19, 1908.

Similar to *T. doliatus doliatus*, but general color much blacker, the white markings narrower and less numerous, and on the tail feathers fewer and smaller.

Wing, 74; tail, 67; culmen, 19; tarsus, 27.

Adult female, No. 43565, Field Museum of Natural History, Encontrados, Zulia, Venezuela. Collected by N. Dearborn, February 12, 1908.

Upper parts rufous chestnut, decidedly darker and less ferrugineous than in the female of *T. doliatus doliatus*; crown darker than back and more chestnut; black stripes on side of head broader and on throat heavier and more confluent; under wing coverts darker than in *T. doliatus doliatus* and spotted with black; tail darker; under parts decidedly darker and deeper rufous, palest on the belly.

Wing, 73; tail, 65; culmen, 19; tarsus, 27.

Apparently a well marked dark form inhabiting the low country in the vicinity of the lower Catatumbo River. I have dedicated this well marked subspecies to Dr. N. Dearborn, who collected a number of the new birds described in this paper.

***Dendrocincla tyrannina hellmayri* subsp. nov.**

Type from Paramo de Tama, Colombia (headwaters of Tachira River near the Venezuela line). Adult male, No. 44185, Field Museum of Natural History. Collected by W. H. Osgood, February 14, 1911.

Similar to *D. tyrannina tyrannina*, but general color somewhat more olivaceous (less rufous), most noticeable on the upper parts; blackish edgings on feathers of forehead heavier and more distinct.

Length (skin), 260 mm.; wing, 125; tail, 115; culmen, 27; tarsus, 27.

I have dedicated this new form to Dr. E. C. Hellmayr.

Furnarius agnatus venezuelensis subsp. nov.

Type locality Rio Aurare, Venezuela (about 15 miles east of Maracaibo). Adult female, No. 44621 Field Museum of Natural History. Collected by W. H. Osgood and S. G. Jewett, January 21, 1911.

Similar to *Furnarius agnatus* but bill longer and the middle of the abdomen white. Superciliary stripe buffy white.

Total length (skin), 165 mm.; wing, 85; tail, 62; bill, 22; tarsus, 29.

Two adult females were secured on the Rio Aurare in January by Messrs. Osgood and Jewett and an immature male was taken near Catatumbo, Venezuela, in October, by Mr. H. F. Raven.

Margarornis perlata peruviana subsp. nov.

Type from Tambo Ventija ten miles east of Molinopampa, Peru (in mountains about 30 miles northeast of Chachapoyas). Adult male, No. 44587, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, June 12, 1912.

Similar to *Margarornis perlata perlata* but olive of crown, slightly more rufous and the white markings on feathers of the under parts replaced by pale yellow. White patch on throat and superciliaries faintly washed with yellow.

Total length (skin), 150 mm.; wing, 82; tail, 81; bill, 12; tarsus, 18.

This well marked subspecies seems to be intermediate between *M. perlata perlata* and *M. squamigera* but approaches much nearer the former in having the olivaceous crown very different from the rufous chestnut back and the feathers of the under parts heavily bordered with black. Female similar but slightly smaller. Seven specimens taken, four males and three females.

Microrhophias grisea fumosa subsp. nov.

Type from Encontrados, Zulia, Venezuela. Adult male, No. 43582, Field Museum of Natural History. Collected by N. Dearborn, February 22, 1908.

Similar to *M. grisea intermedia* but darker; crown and back fuscous brown, and black on under parts more extended; crown slightly darker than the back but shading into black on the forehead; superciliary stripe not extending in front of the eye.

Apparently the darkest form of any of the races of this species.

Length (skin), 128 mm.; wing, 55; tail, 54; tarsus, 21; culmen, 15.

Coereba luteola obscura subsp. nov.

Type from Encontrados, Zulia, Venezuela. Adult male, No. 43655,

Field Museum of Natural History. Collected by N. Dearborn, February 11, 1908.

Similar to *C. luteola luteola*, but the general plumage is darker, the upper parts being almost black; the gray throat is decidedly darker and the rump and under parts deeper yellow and slightly more orange.

Length (skin), 105 mm.; wing, 56; tail, 42; tarsus, 17; culmen, 13.

***Diglossa sittoides intermedia* subsp. nov.**

Type from Cajamarca, Peru (altitude about 9,000 feet). Adult male, No. 44472, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, April 19, 1912.

Similar to *Diglossa sittoides sittoides* but differs in having the crown and forehead bluish plumbeous like the back, the lores and about the eye slightly darker (but not so dark as in *sittoides*), and the under parts much paler shading to buffy white on the middle of the belly.

Total length (skin), 115 mm.; wing, 59; tail, 50; bill, 10; tarsus, 18.

***Synallaxis candei venezuelensis* subsp. nov.**

Type from Rio Aurare, Venezuela (about 15 miles east of Maracaibo). Adult male, No. 44473, Field Museum of Natural History. Collected by W. H. Osgood and S. G. Jewett, January 19, 1911.

Similar to *Synallaxis candei candei* but having a narrow line of white feathers extending from the nostril to the eye. The line of demarkation between the blackish ends of the tail feathers and their rufous bases is much more abrupt than in *candei* and not gradually shading from one to the other.

Total length (skin), 155 mm.; wing, 157; tail, 70; bill, 12; tarsus, 20.

***Atlaptes castaneifrons tamae* subsp. nov.**

Type from Paramo de Tama, Venezuela (near the Colombian line, headwaters of Tachira River, altitude between 6,000 and 7,000 feet). Adult male, No. 44188, Field Museum of Natural History. Collected by W. H. Osgood and S. G. Jewett, March 1, 1911.

Similar to *Atlaptes castaneifrons*, but crown much darker chestnut and narrow frontal band black; general color of upper parts blacker and of under parts darker and more uniformly gray.

Length (skin), 170 mm.; wing, 75; tail, 78; tarsus, 26; culmen, 13.

Seven specimens taken, five males and two females. The females are similar to the males, but slightly smaller.

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DESCRIPTIONS OF NEW BIRDS
FROM SOUTH AMERICA AND
ADJACENT ISLANDS

BY

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CHICAGO, U. S. A.

February 23, 1915.

DESCRIPTIONS OF NEW BIRDS FROM SOUTH AMERICA AND ADJACENT ISLANDS

BY CHARLES B. CORY

The following apparently new birds were contained in collections secured by members of the various Field Museum of Natural History South American Expeditions. Less than half of the material so far received has been studied, and, as the final detailed report of the collections will not be ready for publication for several months, it is desirable to give advance descriptions of the novelties which from time to time may be discovered.

***Crypturus tataupa peruviana* subsp. nov.**

Type from San Ramon, west central Peru (alt. about 2900 ft.). Adult male, No. 47123, Field Museum of Natural History. Collected by M. P. Anderson, June 2, 1914.

Similar to *Crypturus tataupa tataupa*, but differs in having the chestnut brown of the upper parts decidedly darker (with a slight vinaceous tinge in some lights). Breast more slaty gray; the brown central markings on the feathers of the flanks much darker brown, and the black markings on the under tail coverts heavier.

Wing, 127; tarsus, 36; bill, 22 mm.

***Nothoprocta ambigua* sp. nov.**

Type from Hda. Llagueda, N. E. of Otusco, Peru. Adult male, No. 47157, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, March 16, 1912.

Feathers of the upper parts broadly edged with gray, the gray edging separated from the central black portion on most of the feathers by a narrow line of buff; central portion of the feathers black, irregularly marked in the middle and vermiculated at the tips with brown, the markings being smaller, darker and much less ochraceous rufous than in *N. curvirostris*; feathers of the crown with black centers edged with rufous brown; feathers of the nape edged with tawny buff; lores,

throat and sides of the head buff, the feathers of the throat tipped with pale brown; a narrow black streak extends from the base of the lower mandible to below the ear coverts; breast and upper portion of sides of body silvery gray, the bases of the feathers tawny ochraceous and with a central spot of the same color; rest of under parts pale tawny ochraceous, palest on the middle of the abdomen, most of the feathers with obscure buffy white edges; thighs barred with pale brown; general coloration and marking of wings approaching *N. curvirostris*, but the wing coverts more grayish.

Wing, 140; tarsus, 39; culmen, about 90 mm. (tip of bill broken).

The single specimen before me is apparently different from any known Peruvian species. I have not seen *N. fulvescens* and *N. moebiusi* of Berlepsch, but, judging from the published descriptions, they are quite different.

***Odontophorus plumbeicollis* sp. nov.**

Type from Serra Baturite, Ceará, Brazil. Male, No. 47124, Field Museum of Natural History. Collected by R. H. Becker, July 21, 1913.

Nearest to *Odontophorus capueira*, with plain unspotted under parts and outer webs of primaries barred with white. Crest long, the middle feathers more than one inch in length; crown of head and crest olive brown, all except the longest middle crest feathers with whitish shaft lines, the latter more or less distinctly vermiculated with black; forehead and superciliary stripe extending to occiput, reddish brown as in *capueira*; rest of the upper parts similar to *capueira* but more gray and less brownish, especially on the nape; upper back, rump, chin, and throat smoky gray or dark lead color bordered by a narrow black line below the bare skin around the eye; ear coverts blackish gray; rest of under parts brownish gray with a slight olive tinge. Upper tail coverts brownish olive marked with more or less black bordering the shafts; tail feathers dull black, somewhat vermiculated, especially along the outer edges, with brownish olive.

Wing, 152; tail, 80; tarsus, 38; middle toe and claw, 46 mm.

***Columba rufina andersoni* subsp. nov.**

Type from Serra da Lua, near Boa Vista, northern Brazil. Male, No. 46932, Field Museum of Natural History. Collected by M. P. Anderson, May 8, 1913.

Similar to *C. r. sylvestris*, but decidedly smaller and with subterminal

part of tail feathers only very faintly tinged with blackish. Differs from *C. rufina rufina* in having the lower abdomen and under tail coverts slate gray, nearly as in *sylvestris*.

Wing, 171; tail, 114; tarsus, 22; bill, 15 mm.

***Columba rufina tobagensis* subsp. nov.**

Type from Tobago Island. Adult male, No. 47127, Field Museum of Natural History. Collected by W. W. Brown, May 10, 1882.

Nearest to *C. r. pallidicrissa* Chubb from Central America, but having the abdomen more extensively whitish and the under tail coverts purer white; back deeper vinaceous chestnut rufous, and forehead and greater portion of the crown like the back.

Wing, 190; tail, 128; tarsus, 20 mm.

So far as I have been able to learn, this bird has never received a name, and yet it is quite different from birds which I have examined from Venezuela and British Guiana.

***Columba plumbea propinqua* subsp. nov.**

Type from Moyobamba, Peru. Adult male, No. 44068, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, July 20, 1912.

Similar to *C. plumbea plumbea* of Brazil, with uniform colored primaries, but under parts somewhat more vinaceous, the bill shorter and heavier and the wings longer. From *C. p. pallescens* it differs in having the under parts darker, bill larger and the purplish vinaceous coloration on the region of the nape darker and less extensive. From *bogotensis* of Berlepsch & Leverkühn it may be distinguished at a glance in lacking the cinnamon rufous tinge on the under wing coverts, the uniform primaries and absence of any cinnamon rufous on under tail coverts, more olive back and wings, etc., etc.

Wing, 180; tail, 152; tarsus, 24; bill, 16 mm.

***Columba subvinacea zuliae* subsp. nov.**

Type from Oropo, Zulia, Venezuela. Adult male, No. 34473, Field Museum of Natural History. Collected by N. Dearborn, March 2, 1908.

Similar to *C. s. berlepschi* but larger; lower back and wing coverts much less purplish than in *berlepschi*, and browner; with a more purplish tinge and with less of an olive tinge than in *purpureotincta*.

Wing, 164; tail, 127; bill, 13 mm.

***Aramides cajanea venezuelensis* subsp. nov.**

Type from Encontrados, Venezuela. Adult male, No. 34472, Field Museum of Natural History. Collected by N. Dearborn, February 11, 1908.

Similar to *Aramides cajanea cajanea* from Guiana, but entire crown of head dull brown, becoming slightly grayish brown on the forehead but not distinctly so as in *chiricote*; axillars and under wing coverts much paler rufous and less heavily banded with black.

Wing, 180; tarsus, 69; bill (culmen), 51 mm.

***Aramides cajanea peruviana* subsp. nov.**

Type from Moyobamba, Peru. Adult female, No. 44019, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, August 2, 1912.

Similar to *Aramides cajanea cajanea*, but differs in having the back and scapulars much more grayish olive, the crown grayish tinged with smoky brown at the base; under wing coverts and axillars about the same color as in *cajanea cajanea*, but the black markings much heavier.

Wing, 184; tarsus, 75; bill, 51 mm.

***Cerchneis sparverius peruviana* subsp. nov.**

Type from Chachapoyas, Peru. Adult male, No. 47126, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, June 5, 1912.

Crown dark slate color, with black central streaks to the feathers; back vinaceous rufous; tail brighter and more cinnamon rufous; breast ochraceous rufous, becoming paler on sides of body and shading to pale ochraceous buff on the abdomen; buffy white on thighs and under tail coverts; sides of body and flanks with large rounded black spots; a few narrow elongated black spots on the abdomen, largely confined to the middle of the feathers; under wing coverts white with a few black spots largely confined to the inner portion; tail feathers tipped with whitish; inner web of outer tail feather rufous with one subterminal band of black, the tip white; outer web white with several very narrow longitudinal streaks of black bordering the shaft.

Wing, 178; tail, 132; tarsus, 35 mm.

Peruvian specimens (males) from Mirador, Macate, Menocucho, Chachapoyas, and Balsas, apparently represent this subspecies. The measurements of the males from Chachapoyas, Balsas, and Macate are about the same: wing, 177 to 181; tail, 131 to 135. Those from Mirador and Menocucho are somewhat larger: wing, 183 to 185; tail, 136 to 140.

***Cerchneis sparverius distincta* subsp. nov.**

Type from Boa Vista, Rio Branco, Brazil. Adult male, No. 47128, Field Museum of Natural History. Collected by M. P. Anderson, November 27, 1912.

Nearest to *C. s. isabellina* of British Guiana in coloration of under parts and tail feathers, but wings and tail longer and crown much paler gray.

Back ochraceous cinnamon rufous, more cinnamon rufous than in *peruviana*. Crown ashy gray and without streaks; chest pale ochraceous tawny, becoming whitish on the abdomen and buffy white on the flanks and under tail coverts; under parts unspotted; under wing coverts white, without black spots (some specimens show a few small blackish spots on the extreme inner portion); outer web of outer tail feather white (some specimens have very narrow black streaks bordering the shaft); inner web of outer tail feather largely rufous, shading to whitish towards the edge, with one black subterminal band, the tip white; tips of all except the outer tail feathers white in the middle, bordered with rufous.

Wing, 182; tail, 130; tarsus, 33 mm.

Average measurements of four males: Wing, 181; tail, 130 mm.

***Cerchneis sparverius margaritensis* subsp. nov.**

Type from Margarita Island. Adult male, No. 38814, Field Museum of Natural History. Collected by J. F. Ferry, February 20, 1909.

Breast and more or less of abdomen tawny buff (darker and more strongly colored than in *C. s. distincta* or *isabellina*); lower abdomen and flanks much paler, being merely tinged with buff; under parts without black spots (some specimens have a few spots on the sides, which are concealed when the wing is closed); under wing coverts white, with a few black spots largely confined to the inner portion; back vinaceous cinnamon rufous, approaching in color that of *C. s. brevipennis*; inner web of outer tail feather dull white, with several black bands (four in the type specimen); outer web of outer tail feather whitish, with narrow black streaks bordering the shaft.

Wing, 170; tail, 129; tarsus, 32 mm.

The length of the wing, paler under parts and much less marked under wing coverts will distinguish this form from *C. s. brevipennis*; and the coloration and markings of the outer tail feather and deeper colored under parts will distinguish it from *C. s. isabellina*. From *C. s. distincta* it differs in its much darker crown; deeper colored under

parts; shorter wing and tail and different coloration and marking of the outer tail feathers.

Average measurements of four males: Wing, 181; tail, 130 mm.

Average measurements of three females: Wing, 185; tail 132 mm.

***Cerchneis sparverius ochracea* subsp. nov.**

Type from Colon, Tachira, western Venezuela. Adult male, No. 47129, Field Museum of Natural History. Collected by M. P. Anderson, December 11, 1913.

Greater portion of under parts deep ochraceous rufous, becoming ochraceous buff on thighs and pale ochraceous buff on under tail coverts; black spots on under parts confined to sides of body and nearly or quite concealed when wing is closed; crown dark slaty gray, darker than in *brevipennis*, and about the same as in *peruviana*, but without the broad black centers to the feathers; general color of upper wing coverts slaty gray, paler than the crown; inner web of outer tail feather rufous, with one subterminal band of black and grayish white tip; outer web of outer tail feather ashy white, with several very narrow black streaks bordering the shaft.

Wing, 190; tail, 134; tarsus, 34 mm.

In addition to the above described subspecies of *Cerchneis sparverius*, it is probable that at least two more new forms will ultimately be added to the list. A key to the various subspecies, giving their known geographical distribution, together with critical notes regarding the stability of certain distinguishing characters, will be given in the detailed report of the collections now being prepared.

***Otus choliba margaritæ* subsp. nov.**

Type from Margarita Island, Venezuela. Adult female, No. 38808, Field Museum of Natural History. Collected by J. F. Ferry, March 3, 1909.

Similar to *O. c. crucigerus* from Guiana, but smaller and somewhat paler and the quadrate pale markings on outer primaries much more white.

Wing, 150; tail, 85; tarsus, 29 mm.

In 1909* I called attention to the small size of the specimens of this bird from Margarita Island, but hesitated to separate it subspecifically. Since then more material has been secured. The Margarita owl is smaller and paler in general coloration and the markings on the primaries

* Field Mus. Nat. Hist. Publ., Ornith. Ser., I, 1909, p. 242 (*Pisorhina choliba*).

are whiter than in specimens from Georgetown, Guiana, and western Venezuela. I have not seen specimens of *O. roraimæ* Salvin, which from the description would seem to be nearest this form, but on account of the widely separated habitat of the two forms it would be surprising if they should prove to be the same.

***Speotyto cunicularia arubensis* subsp. nov.**

Type from Aruba Island, Windward Islands. Adult female, No. 38126, Field Museum of Natural History. Collected by J. F. Ferry, May 5, 1908.

Nearest to *S. c. brachyptera* Richmond, but differs in being larger and in having the brown markings darker (more umber brown). Outer tail feather dull white, washed slightly with pale buff on the inner web and having two or three very pale brown irregular spots confined to the middle of the feather; entire outer portion of the outer web white for at least half of its width as well as the greater portion of the inner web; buffy white markings on the middle rectrices form incomplete bars or rather lateral oblong spots on each side of the shaft and do not reach the edge of the webs; the buffy whitish blotches on the basal half of the outer web of the outer primary not connected as in *S. c. brachyptera*; front of tarsus very scantily feathered, the lower portion being almost bare. Differs from *S. c. tolimæ* in being larger, less whitish on the throat, differently marked tail feathers and other characters.

Wing, 164; tail, 75; tarsus, 45 mm.

Average measurements of five specimens from Aruba Island: Males — Wing, 159; tail, 73; tarsus, 43 mm. Females — Wing, 163; tail, 75; tarsus, 44 mm.

***Speotyto cunicularia beckeri* subsp. nov.**

Type from Sao Marcello, Rio Preto, Bahia, Brazil. Adult female, No. 47130, Field Museum of Natural History. Collected by R. H. Becker, March 27, 1914.

Differs from *S. c. cunicularia* from Chile in being somewhat smaller, the general coloration darker and more rufous brown and the pale spots on the upper parts tinged with rufous, the pale spots on the crown much smaller; the bars on the under parts regular as in *S. c. cunicularia*, but much more rufous brown, and the white bars more or less tinged with rufous; whitish spots and bars on outer primaries smaller; pale bars on tail feathers decidedly rufescent; under wing coverts more tawny, and front of tarsus less feathered.

Wing, 175; tail, 80; tarsus, 48; culmen, 17 mm.

This new race may be distinguished at a glance from *S. c. cunicularia* by its more rufous brown coloration and less whitish marking, but it approaches nearer to it than it does to the northern Brazilian form, which I assume to be *S. c. grallaria* Temm. (as according to Spix the type locality may have been Para). Brazilian specimens from the Rio Branco region and lower Amazon agree fairly well with Temminck's description and plate, certainly much more so than do Bahia specimens. Birds from the Rio Branco, however, are very similar to those from Margarita Island (*S. c. brachyptera* Richmond), although they average slightly darker and four out of five of the Rio Branco specimens show a few inconspicuous spots and irregular bars on the rump and upper tail coverts, which are apparently wanting in Margarita birds.

***Speotyto cunicularia intermedia* subsp. nov.**

Type from Pacasmayo, Peru. Female, No. 44132, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, April 2, 1912.

Intermediate between *S. c. nanodes* and *S. c. puensis*; approaching *puensis* in the coloration and markings of the upper parts and nearest *nanodes* in the markings of the under parts. From *nanodes* it differs in having the upper parts paler brown and a much more whitish streaked appearance (approaching *puensis*), the whitish marking being much purer and less buffy and the secondaries being broadly tipped with white. The under parts more nearly resemble *nanodes*, being strongly marked with brown, but in *intermedia* the irregular brown markings are somewhat heavier and extend lower down on the flanks. From *S. c. puensis* it differs in the heavy and more extensive brown markings on the under parts (which in *puensis* are very much paler and narrower and become almost obsolete on the lower abdomen). The upper parts are similar in coloration and general marking with the noticeably large amount of white on the feathers, except on the crown, which is darker brown and the white markings much less numerous.

Wing, 165; tail, 89; tarsus, 39 mm.

***Podager nacunda minor* subsp. nov.**

Type from Boa Vista, Rio Branco, Brazil. Adult male, No. 45060, Field Museum of Natural History. Collected by M. P. Anderson and R. H. Becker, February 2, 1913.

Similar to *Podager nacunda* but smaller, and the black markings on crown and scapulars much smaller.

Wing, 223; tail, 114; tarsus, 24 mm.

The average measurements of two females are: Wing, 216; tail, 110; tarsus, 22 mm.

Nyctidromus albicollis obscurus *subsp. nov.*

Type from Yurimaguas, Peru. Adult male, No. 44672, Field Museum of Natural History. Collected by M. P. Anderson, September 16, 1912.

Differs from both *N. a. albicollis* and *N. a. derbyanus* in having the general coloration decidedly darker and more mixed with blackish, the under wing coverts much more extensively black and less marked with brown. The black on wings and tail is deeper and purer black, not brownish black as in the other subspecies.

Wing, 153; tail, 151; tarsus, 21 mm.

Caprimulgus hirundinaceus crissalis *subsp. nov.*

Type from Rio do Peixe, near Queimadas, Bahia, Brazil. Adult male, No. 47158, Field Museum of Natural History. Collected by R. H. Becker, November 28, 1913.

Similar to *C. hirundinaceus* Spix from Ceará and northeastern Brazil, but general plumage darker and more blackish especially on the upper parts; under tail coverts distinctly banded with black.

Wing, 115; tail, 85; culmen, 9; width of upper mandible at base, 6.4 mm.

Three specimens from the Rio do Peixe — compared with ten specimens of *C. h. hirundinaceus* from northeastern Brazil.

Threnetes longicauda *sp. nov.*

Type from Jua, near Iguatu, Ceará, Brazil. Male, No. 47131, Field Museum of Natural History. Collected by R. H. Becker, September 2, 1913.

Crown dull grayish brown, becoming rufous brown on the occiput and nape; upper parts dull grayish green, mixed with glittering green when held in the light (probably clear green in adult breeding plumage?); feathers of the rump and upper tail coverts edged with pale rufous, some of the latter with whitish tips; lores and ear coverts black; chin and middle of upper throat blackish or dusky, rest of throat ochraceous cinnamon buff; breast and under parts grayish buff; under tail coverts tawny buff; wings purplish brown (similar to *T. leucurus*).

Middle tail feathers bronzy green, with narrow white tips and a sub-terminal dusky area; the four outer tail feathers bronzy green on basal portion for more than half their length and very broadly tipped with white, the bronze green being separated from the white ends by an area of bluish black; tail long and very strongly graduated (much more so than in *T. leucurus*); upper mandible black; lower mandible pale, the terminal part black.

Wing, 48; tail, 48; middle pair, 48; outer feather, 26; bill, 26 mm.

This new species has a superficial resemblance to *Threnetes leucurus*, but the very different tail alone will distinguish it at a glance. Indeed the extremely graduated and differently marked tail and other characters, which will be discussed in a later paper, make it not unlikely that it may be found worthy of generic rank.

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NOTES ON SOUTH AMERICAN
BIRDS, WITH DESCRIPTIONS
OF NEW SUBSPECIES

BY

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CHICAGO, U. S. A.

August 7, 1915.

NOTES ON SOUTH AMERICAN BIRDS, WITH DESCRIPTIONS OF NEW SUBSPECIES

BY CHARLES B. CORY

Since the publication of my previous paper on South American birds received from Museum expeditions, further study of the collections has brought to light several apparently new forms which are here described. In this connection I wish to express my thanks to the authorities of various museums and individuals for the loan of specimens for comparison, and especially to Prof. Robert Ridgway and Dr. C. W. Richmond of the United States National Museum, Washington, D. C., to Dr. F. M. Chapman of the American Museum of Natural History, New York, to Dr. Witmer Stone of the Academy of Natural Sciences of Philadelphia, and to Mr. J. Rodway of the Royal Agricultural and Commercial Society of British Guiana.

***Threnetes leucurus rufigastra* subsp. nov.**

Type from Moyobamba, Peru. Adult female, No. 47153, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, January 24, 1912.

Similar in size and general markings to *T. l. leucurus* from Guiana, but differs in having the sides, flanks and abdomen decidedly more brownish buff; back somewhat more bronzy green than in *leucurus*.

***Leucippus fallax richmondi* nom. nov.**

In 1895 (Auk, XII, p. 369) Dr. C. W. Richmond separated the Margarita Island form of *Leucippus fallax*, naming it *Doleromya pallida*. It is apparently a perfectly good subspecies, the characters given for it being well marked in a good series. Unfortunately, however, Dr. Richmond's name *pallida* can not be used for it, being antedated by *Leucippus pallidus* Taczanowski (Proc. Zool. Soc. Lond., Part 4, 1874 [1875], p. 542; and again in Orn. Pérou, I, 1884, p. 402). I therefore propose to name the pale Margaritan bird *Leucippus fallax richmondi*. I have examined thirteen males and a female from Margarita Island,

and three males and a female (?) from Tortuga Island in this Museum, collected by John F. Ferry.

***Piaya cayana cearæ* subsp. nov.**

Type from Jua, near Iguatu, Ceara, Brazil. Adult female, No. 47457, Field Museum of Natural History. Collected by R. H. Becker, August 20, 1913.

Back approaching hazel brown, but coloration duller and less rufescent than in *P. c. colombiana* from Colombia, and nearer *P. c. pallescens* (from state of Bahia); throat nearly as in *pallescens*.

Nearest to *P. c. pallescens*, but differs in having upper parts lighter; upper surface of rectrices brighter and more rufescent (less tinged with purplish); lower abdomen and thighs pale ashy (not neutral gray); under tail coverts shading into pallid neutral gray, decidedly paler and more whitish than in any other known form; under surface of rectrices strongly rufescent, similar to *P. c. colombiana*, not dull blackish tinged with rufous as in specimens examined of *P. c. pallescens* from various localities in Bahia; middle of abdomen ashy white.

Wing, 156; tail, 280; bill, 26; tarsus, 39 mm.

Specimens examined from Jua, 2 ♂, 2 ♀; from Quixada, Ceara, 1 ♀. A specimen from Pernambuco in the U. S. National Museum collection (No. 39704) appears to be intermediate between this form and *P. c. pallescens*, but approaches nearer to *pallescens* than to *cearæ*. The Pernambuco bird approaches *cearæ* in the coloration of the lower abdomen, under tail coverts and flanks, but is much nearer *pallescens* in the coloration of the upper parts and the darker and more purplish upper surface of rectrices and the less rufous under surface of those feathers.

***Piaya melanogaster ochracea* subsp. nov.**

Type from Yurimaguas, Yanc Yaca, Peru. Female, No. 44096, Field Museum of Natural History. Collected by M. P. Anderson, September 8, 1912.

Similar to *P. m. melanogaster*, but differs in having the bill smaller and general coloration somewhat paler; crown paler and more ashy gray; upper parts, throat and breast more tinged with ochraceous rufous.

Wing, 131; tail, 216; tarsus, 37; bill (culmen), 24; depth of bill, 12 mm.

Compared with specimens from British Guiana these differences appear to be constant.

***Chrysophilus punctigula zuliae* subsp. nov.**

Type from Encontrados, Zulia, western Venezuela. Adult male, No. 34632, Field Museum of Natural History. Collected by N. Dearborn, February 14, 1908.

Similar to *C. p. punctipectus* from Cumana, Venezuela, in general coloration of upper parts, but differs in having the throat much blacker, the white spots being much smaller, and the under parts, except middle of lower abdomen, with rounded black spots somewhat approaching *C. p. guttatus* from northern Peru. It differs from *C. p. guttatus* from Peru in its much more olive and less golden green back with smaller and narrower black bands on the upper parts; smaller white spots on the throat, and lack of reddish tinge on the lower throat and upper breast (the last character may vary with age). From *C. p. ujhelyii* and *C. p. striatigularis* it may be distinguished at a glance by its spotted (not streaked) throat, more heavily banded upper parts, and other characters.

Wing, 99; tail, 70; bill, 21; tarsus, 18 mm.

This apparently well marked subspecies inhabits the heavily wooded, low, humid region in the vicinity of Encontrados and Catatumbo. Two females from La Ceiba, Trujillo, Venezuela, while not typical approach close to this form. Specimens examined from Venezuela:—Encontrados, Zulia, 2 ♂, 4 ♀; Catatumbo, 2 ♀; La Ceiba, Trujillo, 2 ♀ (not quite typical).

For convenience of ornithologists the following key to the group is submitted:

KEY TO THE SUBSPECIES OF *Chrysophilus Punctigula* (Bodd.).

A. Throat black, spotted with white.

Upper parts brownish golden olive; wing, about 105; tail, 62; culmen, 23 mm.

C. punctigula punctigula (Bodd.). (Cayenne)
Guiana.

Upper parts slightly more golden olive; wing, about 110; tail, 70, culmen, 23 mm.

C. punctigula guttatus (Spix). (Amazon
region, Brazil) Amazon region and northeast
Peru.

Upper parts much less golden and more olive green; abdomen and flanks without black spots.

C. punctigula punctipectus (Cab. & Hein.).
(Venezuela) Venezuela, northeastern Colombia.

Upper parts approaching *punctipectus*, but throat blacker, with white spots smaller, breast more heavily spotted; abdomen and flanks more or less spotted.

C. punctigula zuliae Cory. (Encontrados, Zulia, Venezuela) Lower Catatumbo River region, Zulia, Venezuela.

B. Throat white, streaked with black.

Black bars on feathers of upper parts longer; under parts more heavily spotted.

C. punctigula striatigularis Chapman.
(Cali, Cauca Valley, Colombia) Cauca Valley region, Colombia, west of eastern Andes.

Black bars on feathers of upper parts small and narrow and more or less obscure; spots on under parts smaller.

C. punctigula ujhelyii Madarasz. (Aracataca, Santa Marta, Colombia) Northern Colombia.

Veniliornis tænionotus cearæ subsp. nov.

Type from Serra Baturite, Ceara, Brazil. Adult male, No. 47441, Field Museum of Natural History. Collected by R. H. Becker, July 18, 1913.

Similar to *V. t. tænionotus* from Bahia, etc., but upper parts much more golden; the transverse yellow barring on back less distinct; under parts paler, more olivaceous; rump and upper tail coverts strongly tinged with golden yellow (not olive with yellowish markings as in typical *V. t. tænionotus*); outer tail feather much more strongly banded with yellowish buff.

Wing, 87; tail, 63; bill, 20; tarsus, 16 mm.

Specimens examined:—1 ♂, 2 ♀ from Serra Baturite, Ceara; 1 ♀ from Jua, near Iguatu, Ceara. One of the females from Serra Baturite has the lower back and upper tail coverts tinged with red.

Scapanus melanoleucus cearæ subsp. nov.

Type from Jua, near Iguatu, Ceara, Brazil. Adult male, No. 47463, Field Museum of Natural History. Collected by R. H. Becker, August 24, 1913.

Similar to *S. m. melanoleucus*, but much smaller.

Wing, 160; tail, 118; bill, 38 mm.

Birds from Macaco Secco, near Andarahy, Bahia, are apparently intermediate in size between *S. m. melanoleucus* and *S. m. cearæ*, and might be referred to either form, the measurements of the male being: wing, 175; tail, 125; bill, 39 mm. But in a series of specimens from Guiana, which I assume to represent typical *S. m. melanoleucus*, the average measurements of the males are: wing, 188; tail, 140; bill, 40 mm.

***Scapanus pallens peruviana* subsp. nov.**

Type from Molinopampa, Peru. Adult female, No. 44816, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, June 18, 1912.

Similar to *S. p. pallens* from Colombia, but differs in having the under parts darker and more chestnut buff; the black bars heavier and clearly marked on the lower abdomen, flanks and under tail coverts; the white patch on the back more strongly tinged with buff; and the rump and the upper tail coverts deeper ochraceous buff without bars.

Wing, 170; tail, 125; bill, 45 mm.

DESCRIPTIVE KEY TO THE SOUTH AMERICAN SPECIES AND SUB-SPECIES BELONGING TO THE GENUS *Piaya*

(Colors as given in Ridgway's Color Standards and Color Nomenclature, Washington, 1912. Type localities given in parenthesis.)

I. Crown gray, very different from the back.

Bill red; back hazel; throat and breast cinnamon rufous; abdomen dull black; wing, about 130; tail, about 225; culmen, 25; depth of bill, 12 mm.

Piaya melanogaster melanogaster (Vieill.).
(Guiana) Guiana and northern Brazil,
Ecuador?

Similar but paler; upper parts and throat more tawny; bill somewhat smaller; wing, about 130; tail, about 225; culmen, 23; depth of bill, 10 mm.

Piaya melanogaster ochracea Cory. (Yurimaguas, Peru) Peru.

II. Crown nearly the same color as the back.

A. Size small; wing less than 115 mm. (4.50 in.).

Bill yellowish; back chestnut ferrugineous; throat and breast cinnamon rufous; abdomen gray tinged with buff; wing, about 107; tail, about 155 mm.

Piaya rutila Illiger. (Cayenne) South American from Brazil and Peru northward.

B. Size larger; wing more than 115 mm. (4.50 in.).

a. More or less of under surface of rectrices distinctly rufous or rusty.

a¹ Under tail coverts grayish.

Back between auburn brown and Sanford brown; throat vinaceous fawn; upper abdomen pale mouse gray; lower abdomen neutral gray; under tail coverts slightly darker neutral gray; thighs smoke gray; under wing coverts ashy white; wing, about 140; tail, about 295 mm.

Piaya cayana colombiana (Cab.). (Cartagena, Colombia) Northern Colombia and Venezuela.

Back between Hessian brown and claret brown; throat fawn color; upper abdomen smoke gray; lower abdomen deep neutral gray; under tail coverts darker, approaching dark neutral gray; thighs deep neutral gray; rusty coloration on tail decidedly darker than in *colombiana*; under wing coverts pale mouse gray; wing, about 140; tail, about 290 mm.

Piaya cayana venezuelensis Cory. (Orope, Zulia, Venezuela) Low country of Orope region, Zulia, Venezuela.

Back near hazel brown; throat approaching vinaceous fawn, but with a tinge of ochraceous (paler and quite different from *cayana*); upper abdomen between smoke gray and light neutral gray (similar to *cayana*); lower abdomen neutral gray, shading into slightly darker neutral gray on under tail coverts; under surface of rectrices only tinged with rufous and not strongly rufous as in *cearæ*; wing, about 147; tail, 285 mm.

Piaya cayana pallescens (Cab. & Hein.). ("North Brazil," suggest Bahia) Central and eastern Brazil.

Back approaching hazel brown, but paler than in *pallescens* from Bahia; throat as in *pallescens*; upper

abdomen pallid mouse gray; middle of abdomen ashy white; thighs, lower abdomen and under tail coverts between pale neutral gray and pallid neutral gray, much paler than in any other known form; under surface of rectrices strongly rufescent; wing, about 148; tail, about 285 mm.

Piaya cayana cearæ Cory. (Jua, Ceara, Brazil) Northeast Brazil (Ceara).

Back between auburn brown and chestnut bay; throat vinaceous fawn; upper abdomen between smoke gray and light neutral gray; lower abdomen neutral gray; under tail coverts near dark neutral gray. Approaches *cayana cayana*, but brighter coloration above, rusty marking on under surface of rectrices and somewhat smaller size will distinguish it. Wing, about 140; tail, about 240 mm.

Piaya cayana insulana Hellmayr. (Trinidad)

b¹ Under tail coverts black.

Back between bay and mahogany red; throat fawn color; under wing coverts pale mouse gray; upper abdomen between neutral gray and smoke gray; lower abdomen, thighs and under tail coverts deep black; wing, about 140; tail, about 285 mm.

Piaya cayana caucæ Stone. (Rio Cauca, Colombia) Cauca Valley and possibly south to Ecuador.*

b. Under surface of rectrices blackish or at most with a tinge of rufous or rusty on some feathers.

c¹ Under tail coverts grayish.

Back chestnut bay, between claret brown and Hessian brown; throat vinaceous fawn; upper abdomen between smoke gray and neutral gray; lower abdomen neutral gray; under tail coverts near dark neutral gray; under wing coverts whitish ashy; wing, about 143; tail, about 280 mm.

Piaya cayana cayana (Linn.). (Cayenne) Guiana, eastern Venezuela and northern Brazil.

d¹ Under tail coverts blackish.

Back between bay and chestnut; upper abdomen

* A specimen in the U. S. National Museum Collection, No. 236439, labeled "Ecuador," is apparently this form.

pallid neutral gray; lower abdomen between smoke gray and neutral gray; under tail coverts grayish black; under wing coverts pale mouse gray; wing, about 144; tail, about 265 mm.

Piaya cayana nigricrissa Sclater (Babahoyo, Ecuador) * Northern Peru, Ecuador, and Colombia north to Bogota.

Compared with *nigricrissa* from Ecuador. *P. c. mehleri* from Central America has the lower breast and upper abdomen approaching neutral gray (decidedly darker than in *nigricrissa*); the lower abdomen and thighs are also distinctly more blackish, the under tail coverts slightly so, and the coloration of the upper parts is darker. Differs from *P. c. nigricrissa* in its ashy gray (instead of quite black) tibia, and blackish gray (instead of black) crissum; under surface of the tail entirely black. Differs from *P. cayana* in the much darker brown (less fox red) upper parts, and the blackish under tail coverts.†

Piaya cayana obscura Sneath. (Rio Purus, W. Brazil) Western Brazil, Bolivia, S. E. Peru.‡

Back walnut bay; throat vinaceous fawn; under wing coverts pale mouse gray; upper abdomen between smoke gray and neutral gray; lower abdomen blackish; under tail coverts blackish (more nearly black than in *nigricrissa*, but not so deep black as in *caucæ*); thighs dusky or dark neutral gray; wing, about 170; tail (Paraguay specimens), about 365 mm.§

Piaya cayana macroura Gambell. (Paraguay) Paraguay and southern Brazil.

* There appears to be no question as to the type locality of this subspecies, the name *nigricrissa* having been first applied by Dr. Sclater to three examples from Babahoyo, Ecuador, which he considered to be new. Later, in giving a list of the species of *Piaya* in his collection, he states he has specimens of the new form "ex Nov. Grenada, rep. Ecuat. et Peru." (Proc. Zool. Soc. Lond., 1860, p. 285.)

† From original description, as I have seen no specimens. The description is unsatisfactory and no measurements are given. *P. c. nigricrissa* from Ecuador has the tibia approaching neutral gray or only slightly darker, and the crissum is grayish black (not deep black as in *caucæ*).

‡ As given by Brabourne & Chubb, Bds. South America, I, 1912, p. 152.

§ Specimens from Paraguay and extreme southern Brazil are very large, while those from farther north are much smaller and may be separable subspecifically (for remarks on this subject see ante).

A REVISION OF THE SPARROW HAWKS (GENUS *CERCHNEIS*)
OF SOUTH AMERICA AND ADJACENT ISLANDS

In describing the supposed new subspecies belonging to this genus in the present and in a previous paper,* the writer examined about 200 specimens from South America and adjacent islands, including the type specimens of all the described forms except that of *C. s. isabellina* and *C. s. australis* (*gracilis* Swainson). The study of this large series seems to show:

1. That the extent of the rufous on the crown (when present) is more or less variable with the age of the individual, but, while in birds from North America and the West Indies it is present in the majority and is rarely entirely absent even in specimens which are evidently adult, in birds from South America it is absent in the majority of specimens and when present seems to be much more restricted in extent, more than seventy-five per cent. of the series of males from South America having no rufous on the crown and in a number of others having it merely indicated by a slight trace. Very few males have a well marked crown patch and at most it is apparently restricted to the basal half. The material available is not sufficient to decide to what extent a rufous patch is present in the very young of these forms.

2. That no dependable correlation exists in the extent of the rufous crown patch and the black banding of the back. Very young birds apparently always have the back heavily banded, but in those which I have examined the amount of rufous on the crown is very variable, one young male from Curacao in its first plumage showing merely a trace of rufous. Some apparently adult males have considerable rufous on the crown and almost the entire back banded with black, while others from the same region have about the same amount of rufous on the crown and the back practically immaculate. Six apparently adult males from the Rio Branco region (northern Brazil) have clear gray crowns, but three of them have the back considerably banded and three have it almost immaculate. Two specimens from the same region show a small rufous patch on the crown; one of these has a few small bands on the lower back, while in the other the back is nearly immaculate. While the females from the same locality have the markings of the upper parts practically identical, two have a rufous crown patch and in two it is absent.

3. That the banding of the back apparently varies with age in individuals, but to what extent remains to be determined. In young males the whole back is usually heavily banded, while in adults the upper back at least is nearly or quite immaculate.

* Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, pp. 293-302.

4. That the extent, shape and size of the black spots on the under parts in males from the same region evidently vary in individuals of practically the same age, and while in some cases they apparently show decided diminution in the adult, in others they are much more persistent. In the series before me, old males of *C. s. cinnamomina* and *C. s. australis* have the spots much smaller, narrower, and confined to the sides and upper abdomen, the lower abdomen and flanks being immaculate. In the young the spots are much larger and extend upon the lower abdomen and flanks. In *C. s. brevipennis*, however, (and probably other closely allied forms) very young males have the lower breast and practically the whole of the abdomen heavily spotted with black, while in old males the under parts appear to be nearly immaculate, the black spots being largely or wholly confined to the flanks and sides of the body. It is also evident, at least in some of the South American forms, that the presence or absence of rufous on the crown and the extent of the black spots on the under parts are not correlated, as for example, in the series of 20 males from Chapada, Matto Grosso, and Bahia, none of the specimens showing rufous on the crown differ very appreciably in the amount of black spotting on the under parts from those having the crown clear gray.

5. That the variation in coloration and marking of the outer rectrix is very great in specimens from some regions, but decidedly less so from others; and while the instability of this character apparently renders it by itself of little or no diagnostic value, it seems desirable that in regions where deviation from the general type appears to be the exception it should be taken into consideration in connection with other differences in distinguishing subspecies, if for no other reason than to enable future investigators to draw their own conclusions.

As an illustration of this, in the series before me 28 males from Colombia and western Venezuela show great variation in the coloration and pattern of the inner web of the outer rectrix: in some it is largely rufous; in others black and white without rufous; and again part white and part rufous, sometimes with one and again with several black bars. Under such conditions such a character would be obviously useless in diagnosis. In fact in some individuals the outer rectrix on opposite sides of the tail is differently colored in the same bird. This is at least suggestive, and as the weight of evidence appears to prove that this perplexing variation in coloration is not due to age,* it would seem not unlikely that it might be largely the result of intergradation in regions

* Specimens which I have examined show that, with the exception of a rusty tinge on the tip, the coloration of the outer rectrix is normally the same in young and old birds of *C. s. paulus* and *C. s. brevipennis*. See also, Hartert, Nov. Zool., 1898, p. 501.

where two or more subspecies meet,* or, in regions where such variation is the exception, to a tendency to atavism or reversion towards an ancient type from which they have become more or less differentiated by difference in environment. Specimens from other parts of South America, however, do not show such extreme variability in this character; in fact deviation from the regional type is seemingly the exception. In the series of specimens from Peru and Chile the normal coloration of the inner web of the outer rectrix posterior to the subterminal black band seems to be rufous, as it is so represented in 20 out of 24 specimens from those regions. On the other hand, out of 20 males from the Provinces of Matto Grosso and Bahia, Brazil, 16 have the inner web of the outer rectrix alternately barred with black and white without rufous; 3 have it part white and part rufous, and only one shows the rufous coloration as in the normal Chilean bird. All of the males which I have seen from Margarita I. and 7 of the 9 from Curacao and Aruba have the inner web of the outer rectrix (posterior to the subterminal black bar) barred with black and white. In two from Curacao it is variegated, being part rufous and part white, while in all the specimens from the Rio Branco region, northern Brazil (7 males from Boa Vista), it is plain rufous.

6. That the variation in length of the subterminal black zone or band on the rectrices seems to represent a good racial character, being very short in *cinnamomina* from Chile, strikingly long in *ochracea* from northern Colombia and northern Venezuela, and showing a gradual gradation in intermediate races.

7. That the absence or presence, as well as the size and number, of the white spots on the outer webs of some of the outer primaries represents a good distinguishing character in some races.

8. That there is comparatively little individual variation in the intensity of the coloration of the under parts in adults of the same subspecies, but that immature birds are paler. In very young males the gray wing coverts are tipped with rufous buff and the inner primaries strongly tipped with white or whitish.

9. That the configuration and confluence or non-confluence of the distal white patches on the inner webs of the outer primaries seem to be too variable to be of value in diagnosis, and apparently have no dependable racial significance. For example, in one of the eight specimens of *peruviana* now before me, none of the markings are confluent; in two

* A possible analogy suggests itself in the case of *Colaptes auratus luteus* and *Colaptes cafer collaris* in the Yellowstone and Black Hills regions in North America, where great irregularities in coloration are very frequent, abnormally colored specimens approaching the California form, *C. c. collaris*, being also occasionally found east of the Mississippi River and *vice versa*.

the distal patches are confluent on the fourth; in three they are confluent on the third; and in two, on the third and fifth primary. The same irregularity is shown in all specimens representing other races, with the exception of *caucæ*, fully 96 per cent. having the distal patches joined on at least one primary and the majority on two or more. In *caucæ*, however, none of the specimens examined have any of these markings confluent, but in view of the variability of the character in other forms it would seem probable that in *caucæ* also in a larger series it would be found to be inconstant.

LIST OF THE SUBSPECIES OF *Cerchneis sparveria* IN SOUTH AMERICA,
WITH TYPE LOCALITIES

- Cerchneis sparveria cinnamomina* (Swains.). (Chile) See page 315.
Cerchneis sparveria fernandensis Chapman. (Masatierra, Juan Fernandez Islands.) See page 316.
Cerchneis sparveria australis Ridgway. (Bahia, Brazil) See page 316.
Cerchneis sparveria peruviana Cory. (Chachapoyas, alt. about 7700 ft., northern Peru.) See page 319.
Cerchneis sparveria caucæ Chapman. (La Manuelita, alt. about 3500 ft., near Palmira, Cauca Valley, Colombia.) See page 321.
Cerchneis sparveria æquatorialis Mearns. (Guayaquil,? Ecuador.) See page 322.
Cerchneis sparveria andina * subsp. nov. (Quito, alt. about 9300 ft., Ecuador.) See page 323.
Cerchneis sparveria intermedia * subsp. nov. (Villavicencio, alt. about 1600 ft., base of eastern Andes, Colombia.) See page 325.
Cerchneis sparveria ochracea Cory. (Colon, alt. about 2500 ft., western Venezuela.) See page 326.
Cerchneis sparveria perplexa subsp. nov. (Lower Essequibo River, British Guiana.) See page 327.
Cerchneis sparveria isabellina (Swains.). (Demerara.) See page 328.
Cerchneis sparveria distincta Cory. (Boa Vista, Rio Branco, Amazonas, Brazil.) See page 330.
Cerchneis sparveria margaritensis Cory. (Margarita Island, Venezuela.) See page 331.
Cerchneis sparveria brevipennis (Berlep.). Curacao, Aruba and Bonaire Islands. See page 332.

* I am indebted to Dr. F. M. Chapman, Curator of Birds in the American Museum of Natural History, New York, for permission to name these new forms, the types being in the collection of that museum.

DISTINGUISHING CHARACTERS AND SUPPOSED DISTRIBUTION OF SUB-
SPECIES OF *Cerchneis sparveria* (LINN.) IN SOUTH AMERICA
AND ADJACENT ISLANDS

***Cerchneis sparveria cinnamomina* (Swains.).**

Falco cinnamomina Swains., Anim. in Menag., I, 1837, p. 281.

Type locality: "Chile."

Range: Chile, northwestern, western and southern Argentina to Patagonia and Straits of Magellan, northward to southern Peru and Paraguay; intergrading with *australis* in northeastern Argentina, Paraguay, and Rio Grande do Sul, Brazil, and with *peruviana* in southern Peru.

Characters: Male. Size large; tips of rectrices with more or less rufous, usually rufous or rufous and white; central rectrices often entirely tipped with rufous, but usually with rufous and gray; subterminal black band short (from 9 to 16, averaging about 13), decidedly narrower than in *australis* or *peruviana*; inner web of outer rectrix normally rufous, usually with one subterminal black band and a white or white and rufous tip; breast tinged with pale ochraceous rufous (averaging nearly as pale as in *australis*); under parts whitish, with more or less numerous rounded black spots; exposed white spots on outer webs of outer primaries restricted to 2 or 3 small narrow marks near the shaft on the third and occasionally showing a trace of one on the second.

Wing, 187 to 199, average 193; tail, 129 to 143, average 134 mm.

Female. Similar to *australis*, but averaging larger; black bars on rectrices narrower and less complete and subterminal band narrower; outer rectrix occasionally immaculate.

Wing, 195 to 208, average 198; tail, 132 to 144, average 137 mm.

Comparative differences: Male differs from *australis* (from Bahia and Matto Grosso) in averaging considerably larger and in difference in normal coloration of the rectrices (*australis* usually has no rufous on the outer rectrix, the tips of most of the rectrices white, and rarely showing any rufous); subterminal black bands on the rectrices narrower, and under parts usually not quite so pale. Female differs from *australis* in average larger size; black bars on tail narrower and less complete; subterminal band narrower; outer rectrix with black marking usually smaller and more often immaculate. Male of *cinnamomina* differs from *peruviana* by its larger size, more whitish and more heavily spotted under parts; breast paler (less tinged with ochraceous rufous); sides and flanks whitish (not noticeably tinged with ochraceous buff as in *peruviana*); subterminal band on tail shorter.

Specimens examined: "Chile" — 3 ♂, 1 ♀; Valdivia, 1 ♂; Cautin, 1 ♂, 2 ♀; Santiago, 1 ♂, 1 ♀; Straits of Magellan, 1 ♀.

Argentina — Chilicito, Prov. of Rioja, 1 ♂, 1 ♀; Rio Chico (Patagonia), 2 ♀; Rio Grande do Sul, 1 ♂, 1 ♀ (not typical, intergrades).

Remarks: Two specimens from Rio Grande do Sul are apparently intergrades between this form and *australis*. The male is of large size (wing, 197) and shows a little rufous bordering the white on the tips of some of the rectrices; the inner web of the outer rectrix has the basal half rufous and the terminal half white with black bars; the subterminal black bands on the rest of the rectrices are nearly as narrow as in *cinnamomina*. All specimens examined from Chile, both male and female (with one exception), show more or less rufous on the crown; some with a small but well defined crown patch and others with merely a trace. The single exception (male), which shows no trace of rufous on the crown, agrees with the others in the extent of the spotting on the under parts and barring on the upper parts.

***Cerchneis sparveria fernandensis* Chapman.**

Cerchneis sparverius fernandensis Chap., Bull. Am. Mus. Nat. Hist. N. Y., XXXIV, 1915, p. 379.

Type locality: Masatierra I., Juan Fernandez Islands (off Chile).

Characters: Nearest to *C. s. cinnamomina*, but very different from any South American race. From *cinnamomina* it differs in being much more deeply colored and the under parts more heavily and extensively marked with black; breast more ochraceous rufous; upper parts much darker, approaching rufous chestnut; ventral region and under tail coverts clear buff; tips of central rectrices largely rufous, the others white with more or less rufous; tail band averaging about 13 mm.; outer webs of primaries without white spots or with only a trace on the third.

Wing, 189; tail, 134; tarsus, 33 mm.

Adult female differs from *cinnamomina* in its darker upper parts; under parts strongly washed with deep rufous ochraceous and with darker brown markings.

Wing, 200; tail, 135; tarsus, 36 mm.

Comparative differences: Readily distinguished from other races by its deeply colored and heavily marked (almost mottled) under parts.

Specimens examined: Juan Fernandez Islands — Masatierra I., 3 ♂, 3 ♀.

***Cerchneis sparveria australis* Ridg.**

Falco gracilis Swains., (not of Lesson) Anim. in Menag., I, 1837, p. 281.

Falco sparverius var. *australis* * Ridg., Proc. Acad. Nat. Sci. Phila. 1870, p. 149.

Type locality: Province of Bahia, Brazil.

Range: Brazil, ranging northward nearly or quite to the Amazon River and Pernambuco (and Ceara?); intergrading with *cinnamomina* in extreme southern Brazil (Rio Grande do Sul), Paraguay, and north-eastern Argentina, and probably with *peruviana* on the eastern slope of the Andes in Bolivia and eastern Peru.

Characters: Adult male. General coloration and black spotting of the under parts resembling *cinnamomina*, but under parts averaging slightly more whitish and size smaller; inner web of outer rectrix normally black and white without rufous; subterminal black band on rectrices comparatively broad, averaging (in 20 males from Matto Grosso and Bahia) 22 mm.; white spots on outer webs of outer primaries as in *cinnamomina*.

Wing, 175 to 185, average 180; tail, 122 to 133, average 127 mm.

Adult female. Similar to *cinnamomina*, but smaller and black bars on rectrices broader and more complete.

Wing, 182 to 195, average 186; tail, 123 to 132; average, 129 mm.

Comparative differences: Adult male. Differs from *C. s. cinnamomina* in its smaller size; the tips of the rectrices normally white or whitish (except the central pair which are usually grayish); subterminal black band on rectrices broader (usually 20 mm. or more); inner web of outer rectrix normally barred with black and white, without rufous; under parts averaging whiter; tail relatively and actually shorter.

Female differs from *cinnamomina* in its average smaller size and in having the black bars on the rectrices wider and more complete, and subterminal band wider.

Male differs from *C. s. peruviana* in more whitish under parts; breast paler (less tinged with ochraceous cinnamon rufous); sides and flanks whiter (not noticeably tinged with pale ochraceous cinnamon); inner web of outer rectrix normally black and white (not rufous as in *peruviana*); crown averaging paler. Female differs from *peruviana* in relatively shorter tail and average paler brown markings on under parts.

* Alternative name for *F. gracilis* Swainson (which was pre-occupied) and therefore the type locality is Bahia, as given by Swainson. The fact that Ridgway later (in Baird, Brewer and Ridgway, Hist. N. A. Bds, III, 1874, p. 166) described a bird from Parana, Paraguay, as *australis*, and that a specimen in the U. S. National Museum collection (No. 20937) is labeled, "Type of *Tinnunculus sparverius* var. *australis* Ridgw.," has no bearing on the case and does not change the original type locality. Furthermore the Parana specimen is apparently an intergrade between *cinnamomina* and *australis*, and in my opinion approaches somewhat nearer the former than the latter.

Specimens examined: Brazil—Chapada, Matto Grosso, 18 ♂, 22 ♀; Sao Marcello, Rio Preto, Bahia, 2 ♂; Pernambuco, 2 ♂; ?Quixada,* Ceara, 1 ♂.

Paraguay — Rio Parana', 3 ♂, † (2 intergrades, not typical).

Argentina — Conchitas, Buenos Ayres, 2 ♂ (intergrades).

Remarks: Out of twenty males from the Provinces of Matto Grosso and Bahia, Brazil, sixteen have the inner web of the outer rectrix black and white, three have it part rufous and part white and only one has the whole web (except the black subterminal band and white tip) rufous. ‡ One specimen from Chapada, Matto Grosso, has the tip of several of the rectrices largely rufous as in *cinnamomina*, but the outer rectrix is part rufous and part white and the wing measures 182 mm.

Fourteen of the twenty males have the crown plain, with no trace of rufous; five show a trace of rufous; and one has a well marked rufous crown patch; the last can be matched in the banding of the upper parts and spotting of the under parts by specimens having no rufous on the crown.

Two males from Pernambuco, Brazil, may be referred to *australis*, and the locality probably represents about the northern limits of its range. In one the wing measures 173 and in the other 180 mm. Both specimens have the under parts well spotted and one has the inner web of the outer rectrix black and white; in the other the outer rectrices have been lost. One has the crown immaculate, but the other shows a well marked rufous crown patch.

Two males from Conchitas, Buenos Ayres, Argentina, are apparently intergrades between this form and *cinnamomina*, although a good series from northeastern Argentina might prove them to be subspecifically distinct from either. They are large (wing, 190 and 195) and, while the

* The single male specimen which I have seen from Quixada, Ceara, Brazil, is provisionally referred to this race. It is evidently not adult and the general coloration of the upper parts is decidedly paler than in either *australis* or *distincta*. The markings of the under parts approach *australis* in being spotted; but the black spots are smaller, largely linear in shape and more scattered. The inner web of the outer rectrix is pale rufous, with the usual subterminal black bar and white tip, in this approaching *distincta*. The gray crown approaches that of *distincta* in color and there is a large rufous crown patch. The distal white patches on the inner webs of the outer primaries are decidedly larger and extend much farther towards the end of the feather than in any specimen of *australis* or *distincta* seen by me. It may prove to be an immature intergrade between *australis* and *distincta* or *isabellina*, but it is not unlikely that it represents a pale local race peculiar to those arid regions. If this should prove to be the case, I propose for the Ceara bird the name, *Cerchneis sparveria ceara* (Type from Quixada, Ceara, Brazil. Male, No. 47593, Field Museum of Natural History. Collected by R. H. Becker, June 19, 1913. Wing, 170; tail, 126; tarsus, 34 mm.).

† See remarks concerning these specimens p. 319.

‡ This is a young male, the size being very small (wing, 167; tail, 110); plumbeous wing coverts with rusty tips; entire back barred, etc. It is not included in the average measurements of the species.

narrow subterminal black band on the tail approaches *cinnamomina*, the tips of the feathers are white (the central ones grayish), without rufous; the inner web of the outer rectrix in both specimens is black and white, but in one it shows some rufous on the basal portion. Three males and one female from the Paraná region, Paraguay (Coll. U. S. National Museum), may be briefly described as follows:

Male, No. 20937, U. S. Nat. Mus., labeled "Exploration of the Paraná, Sept., 1860. Type of *Tinnunculus sparverius* var. *australis* Ridgw."

Crown with small patch of rufous; under parts nearly white (with no noticeable wash of ochraceous rufous on breast), marked with numerous comparatively small linear spots of black; tips of rectrices largely worn off, but three outer ones showing more or less white; greatest width of subterminal black band on any of the rectrices 17 mm.; inner web of outer rectrix on one side of the tail rufous, with one subterminal black band; the outer rectrix on the opposite side with basal portion rufous, the terminal third white, with two black bands; wing, 193; tail, 133 mm. This specimen is apparently an intergrade between *cinnamomina* and *australis*, more nearly approaching the former.

Male, No. 119802, agrees in coloration and marking with specimens from Bahia, but the size is large (wing, 195; tail, 137), no rufous on the tips of rectrices; inner web of outer rectrix black and white; width of tail band on central rectrices, 18 mm.

Male, No. 119801, agrees very well in size and coloration with some Bahia specimens (wing, 184; tail, 128); tips of some of the rectrices with a tinge of rufous; tail band 18 mm.; inner web of outer rectrix black and white, but showing a trace of rufous along the shaft on the basal portion.

Female, No. 20936, approaches some specimens from Chile in size and coloration (wing, 196; tail, 143).

***Cerchneis sparveria peruviana* Cory.**

Cerchneis sparverius peruviana Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 296.

Type locality: Chachapoyas, Peru; alt. about 7700 ft.

Range: Peru and southern Ecuador, probably intergrading with *C. s. cinnamomina* in southern Peru; with *australis* in Bolivia and possibly with *æquatorialis* in southern Ecuador.

Characters: Male. Breast pale ochraceous cinnamon rufous, somewhat paler on sides of body and shading into cinnamon buff on abdomen; buffy white on thighs and under tail coverts; sides of body and flanks with large rounded black spots and often a few linear black

spots on the abdomen largely confined to the middle of the feathers; tail feathers tipped with white, more or less mixed with rufous (in some specimens the rufous color predominating); inner web of outer rectrix normally rufous, with one subterminal black bar, the tip white; outer web of third outer primary with three white spots; the second with one small narrow streak or only a slight trace; tail band about 19 mm.

Wing, 175 to 183, average, 181; tail, 129 to 138, average 134 mm.

Female. Similar to female of *australis*, but upper parts and upper surface of tail averaging slightly more deeply colored and outer tail feathers more often nearly immaculate.

Wing, 180 to 193, average, 186; tail, 131 to 140, average, 135 mm.

Comparative differences: Male differs from *C. s. cinnamomina* in smaller size; breast noticeably more ochraceous cinnamon rufous; sides and flanks tinged with ochraceous cinnamon (not white or almost white as in *cinnamomina*); subterminal black band on tail broader.

Male differs from *C. s. australis* in deeper colored under parts; more ochraceous cinnamon rufous on breast; sides and flanks distinctly washed with pale ochraceous cinnamon (not white as in *australis*); inner web of outer rectrix normally rufous (not black and white as in *australis*); crown darker and tail longer. Female differs from *australis* in relatively and actually shorter tail; and somewhat paler brown markings on the under parts.

Male differs from *C. s. æquatorialis* in smaller size and much less deeply colored under parts. Differs from *C. s. caucæ*, to which it is very closely related apparently, only in the paler coloration of the breast which in *caucæ* more nearly approaches *C. s. ochracea*; also less pronounced white spots on outer web of second and third primaries. From *andina* and *intermedia* it may be distinguished at a glance by the spotted and much paler under parts and other characters.

Specimens examined: Peru — Chachapoyas, 1 ♂; Macate, 2 ♂, 3 ♀; Menocucho, 1 ♂; Mirador, 1 ♂, 1 ♀; Hda. Limon, near Balsas, 1 ♂; Cajamarca, 1 ♀; Lima, 1 ♂.

Ecuador — Huigra, 1 ♂; Junction of Chanchan and Chiguancay Rivers, 1 ♂.

Bolivia — Yungas, 1 ♂ (not typical).

Remarks: Of seven males from Peru, six have the inner web of the outer rectrix rufous, with subterminal band of black and the tip white, and one (from Macate) has it black and white. All have the tips of the rectrices more or less rufous, and in two the rufous color predominates, resembling *cinnamomina* in this character; the subterminal black band on the rectrices varies in width from 17 to 20 mm. in different specimens. None of the males show any trace of rufous on the crown,

but two of the females show a slight trace and three have a small but well marked rufous crown patch; all of the males are more or less spotted on the under parts.

***Cerchneis sparveria caucae* Chapman.**

Cerchneis sparverius caucae Chap., Bull. Am. Mus. Nat. Hist. N. Y., XXXIV, 1915, p. 375.

Type locality: La Manuelita (alt. 3500 ft.), near Palmira, Cauca Valley, Colombia.

Range: Western Colombia and western slopes of Central Andes; northwestern Ecuador.

Characters: Adult male. Similar to *C. s. peruviana* in size and general marking, but differs in deeper cinnamon coloration of the breast (approaching that of *ochracea*); outer web of second outer primary usually with two small white spots, the outer web of third with three well marked white spots; distal white patches on inner webs of outer primaries (in specimens examined) not confluent;* length of tail band, 17 to 22 mm.

Wing, 175 to 185; tail, 119 to 132 mm.

Adult female. Similar to the female of *peruviana*, but coloration of upper parts darker and under parts more tinged with buff.

Wing, 183 to 186; tail, 129 to 135 mm.

Comparative differences: This form may be readily distinguished from *C. s. andina*, *C. s. intermedia*, and *C. s. ochracea* by its spotted under parts; from *C. s. peruviana* by the character already given; from *C. s. æquatorialis* by its shorter tail band, shorter tail, and smaller size; and from *cinnamomina* and *australis* by its much more deeply colored under parts and other characters.

Specimens examined: Colombia — La Manuelita (near Palmira), alt. 3500 ft., Cauca Valley, (Type) 1 ♂, 1 ♀; Cali, Cauca, 1 ♂; La Florida, west of Popayan, 1 ♂, 1 ♀; La Tig, Cauca, 1 ♂, 1 ♀; Noamama, Rio San Juan, Cauca, 1 ♀.

Ecuador — Gulea, Prov. Pichincha, 1 ♂ (not typical).

Remarks: The specimen from Gulea, Ecuador, approaches *cauca*, but is larger and white spots are present on the outer web of the fourth (outer) primary. All Colombian specimens which I have seen have two small white spots or streaks on the outer web of the second (outer) primary and three larger ones on the third; one male has a trace of rufous on the crown, in the rest it is plain; none of them have the distal white patches confluent on any of the outer primaries.

* See remarks concerning this character, p. 313.

***Cerchneis sparveria æquatorialis* (Mearns).**

Falco sparverius æquatorialis Mearns, Auk, 1892, p. 269.

Type locality: Ecuador (Guayaquil?; exact region unknown).

Range: Ecuador.

Characters: Male (Type, No. 101309, U. S. National Museum). General coloration and spotting of under parts approaching *caucæ*, but size larger; outer web of second outer primary immaculate; third with two small narrow white spots; tail band wide; tail long; inner web of outer rectrix black and white, without rufous.

Wing, 192; tail, 141; width of tail band, 26 mm.

Female (No. 67349, U. S. National Museum). Wing, 195; tail, 139 mm.

Comparative differences: Differs from *C. s. andina* in the heavy spotting of the under parts and somewhat paler coloration; in the much wider tail band; and in the absence of the pronounced white markings on outer webs of several outer primaries. From *caucæ* and *peruviana* it differs by its larger size; longer and much wider tail; and also from the latter in the more deeply colored under parts. From *cinnamomina* it differs in its very much wider tail band and more deeply colored under parts; and from *C. s. ochracea* in its somewhat larger size; longer tail; and strongly spotted under parts.

Remarks: The type locality of this subspecies may or may not have been Guayaquil, Ecuador,* as given by Mearns; and it is by no means certain that the female came from the same locality as the male, or in fact is the same subspecies. The male, however, having been first described, must be accepted as the type of *C. s. æquatorialis*. While it is probable that the type specimen was not killed in the vicinity of Guayaquil, until specimens have been secured from this locality for comparison we have no grounds for the positive assertion that it was not, as it differs from any other specimen which I have seen from Ecuador or elsewhere. The type specimen is apparently not fully adult and is intermediate in size between the large deeply colored and comparatively unspotted birds from Quito and Mt. Chimborazo (*C. s. andina*) and the strongly spotted and smaller birds from lower altitudes (*C. s. caucæ* & *C. s. peruviana*). It is, however, quite similar to some of the latter in coloration, and not greatly different in size (except for its longer tail) from a specimen which is apparently *C. s. caucæ* from

* Dr. C. W. Richmond writes me as follows: "I find that Dr. Jones received the birds from a Mr. Cartright of Guayaquil, who was constantly receiving them from the interior of Ecuador. So it appears that the type localities of the *Falco æquatorialis*, the *Columba guayaquilensis* and the *Xiphocolaptes saturatus* described from this collection will always be in doubt." (See also Chapman, Bull. Am. Mus. Nat. Hist., N. Y., XXXIV, 1915, p. 377.)

Gulea, Province of Pichincha, but it differs from both forms in its broad tail band (which measures 26 mm.) and absence of the white markings on the second (outer) primary which is strongly marked in *C. s. andina* and usually present, but in a very much less degree, in *caucæ*. If we assume this puzzling specimen to be an intergrade, we are confronted by a problem to determine to which race it should be referred on account of the wide tail band and plain outer webs of the second (outer) primaries, characters which are not found in either of the other Ecuadorian races. Even should the spotting of the under parts ultimately disappear with maturity (which so far as we know in strongly spotted birds is questionable), it would be difficult to identify it with any known form on account of the other differences. I have therefore provisionally considered *C. s. æquatorialis* to represent a distinct subspecies from an unknown locality, until a much larger series of specimens from Ecuador is available for comparison and the relationship of forms inhabiting that region can be more satisfactorily determined.

***Cerchneis sparveria andina* subsp. nov.**

Type from Quito (alt. about 9300 ft.), Ecuador. Male, No. 123965, American Museum of Natural History, New York. Collected by Wm. B. Richardson, May 21, 1913.

Range: Ecuador, probably largely or wholly confined to altitudes ranging from 5000 to 13000 feet.

Characters: Male. Similar to *C. s. ochracea* in the deeply colored ochraceous cinnamon under parts, but differs in somewhat larger size; much longer tail; much narrower tail band; and more pronounced and more numerous white spots on the outer webs of the outer primaries. Under parts deep ochraceous cinnamon, with a few, mostly small and narrow, black spots on the sides of the abdomen (other specimens have the black spots on the under parts practically absent or when present they are small, linear in shape and usually confined to the sides of the body); outer webs of the second, third, fourth, and fifth outer primaries with large white spots (the second usually with three large exposed spots, and a fourth concealed by the coverts; the third with four, the fourth with two and three, and in typical specimens from high altitudes the fifth and often the sixth with at least one); greatest breadth of the black subterminal band on the tail, measured at the shaft of the feather, 18 mm.; inner web of outer rectrix rufous, with a subterminal black band and the tip white; under wing coverts white, spotted with black, and the outer portion strongly tinged with buff.

Wing, 202; tail, 144; tarsus, 37.5 mm.

Average measurements of four males from Quito and Mt. Chimborazo: Wing, 196 to 205, average 200; tail, 140 to 144, average 141; width of tail band, 16 to 20, average 18 mm. Measurements of three females: Wing, 194 to 208; tail, 143 to 148 mm.

Comparative differences. The male of this large, deeply colored race may be distinguished at a glance from all other known American forms (except *C. s. ochracea* and *C. s. intermedia*) by its deep ochraceous cinnamon and usually nearly immaculate under parts; its large size; long tail; and noticeably white blotches or spots on the outer webs of several (including the second) of the outer primaries. From *C. s. ochracea* it may be distinguished by its much narrower tail band, which in *ochracea* averages about 29 mm.; larger size; and the large white spots on the outer web of the second (outer) primary and several of the others. From *C. s. intermedia* it may be separated by its much longer tail; average larger size; somewhat narrower tail band; buffy tinge on outer under wing coverts; and the larger and more numerous white spots on the second, third and fourth outer primaries. From the type specimen of *C. s. æquatorialis* it differs in its much more deeply colored under parts; absence of numerous, large, rounded black spots; much narrower tail band; somewhat larger size, and the presence of several large white spots on the outer webs of several of the outer primaries. The female averages larger in size, the breast is rather more tawny, and the buffy spots on the second and third (outer) primaries are larger and more numerous than in allied races.

Specimens examined: Ecuador — Mt. Chimborazo, 3 ♂; Quito, 1 ♂, 1 ♀; Riobamba, 1 ♂; "Ecuador," 1 ♂; Ambato, 2 ♀; Chuncha, 1 ♀; Cumbaga, 1 ♀.

Remarks: Two males have the inner web of the outer rectrix rufous, with the usual subterminal band of black and the tip white. Two others have the greater portion of the web rufous, but have two black bands on the terminal part, the space between the bands being white. None of them show any rufous on the crown, and in four out of the five males the tips of the rectrices are more or less mixed with rufous. None of the females show any rufous on the crown. The specimen from Riobamba, which I have provisionally referred to this race, is not typical. It is smaller (wing, 185; tail, 136); has less white marking on the outer web of the third and fourth outer primaries and some white mixed with the rufous and a second black band on the terminal part of the outer rectrix. Another specimen from Huigra, Chimborazo (alt. about 5000 ft.), is apparently an intergrade, being smaller (wing, 187; tail, 130); the under parts paler; tail band 24; and

spots on outer webs of primaries fewer and narrower, and the outer rectrix black and white.

***Cerchneis sparveria intermedia* subsp. nov.**

Type from Villavicencio (alt. 1600 ft.), base of eastern Andes, Colombia. Adult male, No. 121449, American Museum of Natural History, New York. Collected by Chapman, Cherrie, *et al.*, March 14, 1913.

Range: Andes region of Colombia, from Cundinamarca and Bogota southward.

Characters: Adult male. Similar to *C. s. ochracea* in its deeply colored ochraceous cinnamon and practically unspotted under parts, but differs in averaging somewhat larger; black subterminal band on the rectrices much shorter, and more pronounced white markings on the outer webs of second and third (outer) primaries. The type specimen has the inner web of outer rectrix barred with black and white, with a tinge of rufous near the shaft on the basal part.

Male: Wing, 189; tail, 127; tarsus, 37; greatest breadth of black tail band (measured at shaft of feather), 20 mm. Average measurements of seven males from Villaviciencio, Honda, Magdalena River, and Bogota: Wing, 177 to 189, average 185; tail, 124 to 132, average 129 mm. Seven males from Cundinamarca, which are apparently this form, average decidedly larger: Wing, 188 to 199, but the tail measurements (126 to 132) and the subterminal band on the tail (18 to 22) average about the same.

Female: Wing, 194; tail, 139 mm.

Comparative differences: The practically unspotted and deeply colored under parts will readily distinguish males of this race from other South American forms except *C. s. ochracea* and *C. s. andina*. From the former it differs in averaging somewhat larger; in the much narrower black tail band (varying from 18 to 22 mm.; while in *ochracea* it varies from 28 to 34, averaging about 29); and in the much more pronounced white markings on the outer webs of the second and third (outer) primaries, the second having two spots or streaks and the third three well marked spots (in *ochracea* the second is plain or with one small spot, and on the third the three spots are small and narrow). From *C. s. andina* it differs in averaging smaller in size; much shorter tail; somewhat broader tail band; much smaller and less numerous white spots on the outer webs of the outer primaries (in *andina* the white spots are much larger, and are present on the fourth, fifth, and often the sixth outer primary, as well as the second and third), and in purer white under wing coverts.

Specimens examined: Colombia — Cundinamarca, 7 ♂, 4 ♀; Villavicencio, 1 ♂; Honda, Magdalena River, 4 ♂, 1 ♀; Bogota, 2 ♂, 3 ♀; Rio Toche, Tolima, 1 ♀; Andalucia, eastern Andes, 1 ♂, 2 ♀.

Remarks: All the males which I have seen have two white spots or streaks on the outer web of the second (outer) primary, and, with one exception, three well marked spots on the third. Twelve males have the crown plain and only two show a trace of rufous. The coloration of the inner web of the outer rectrix is very variable. Five males have it rufous, with the usual subterminal black band and white tip; four have it part rufous and part white, with two black bands; and three have it alternately banded with black and white, without rufous.

***Cerchneis sparveria ochracea* Cory.**

Cerchneis sparverius ochracea Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 298.

Type locality: Colon (alt. about 2300 ft.), Tachira, western Venezuela.

Range: Western Venezuela and northeastern Colombian region north and east of Cundinamarca; probably intergrading with *intermedia* in the south and *isabellina* or *distincta* in eastern Venezuela.

Characters: Adult male. Greater portion of under parts ochraceous rufous cinnamon or ochraceous cinnamon, becoming ochraceous buff on the thighs and pale ochraceous buff on the under tail coverts; black spots on under parts confined to sides of body and nearly or quite concealed when the wing is closed; crown dark slaty gray, darker than in *brevipennis* and about the same as *cauca* and *peruviana*; outer web of second outer primary without white spots or occasionally with a slight trace; outer web of third outer primary with from one to three small spots or short narrow streaks; inner web of outer rectrix (in type) rufous, with one subterminal black band of black, and grayish white tip.

Male: Wing (of type), 185;* tail, 133; tarsus, 34; tail band, 33 mm. Average of nine males from Merida and Colon, Tachira, Venezuela, and Paramo de Tama and Andalucia, Colombia: Wing, 180 to 185, average 183; tail, 127 to 132, average 130; length of subterminal black band on the tail, 27 to 33, average 29 mm.

Female: Wing, 191 to 195, average 193; tail, 135 to 139, average 136 mm.

Distinguishing characters: This race, on account of the deeply colored and practically unspotted under parts (black spots when pres-

* By mistake the measurement of the wing in the original description of the type was given as 190 mm.

ent being nearly or quite concealed by the closed wing), needs comparison with but three other forms; *i.e.*, *intermedia*, *andina*, and *perplexa*. From *intermedia* it differs in its much longer tail band, and difference in white spotting of the outer webs of the second and third outer primaries. From *andina* it may be distinguished by its smaller size; shorter tail; much longer tail band and the absence of large white spots on the outer webs of several of the outer primaries, and from *perplexa* by its much larger size and more rufous (less chestnut) upper parts, especially rump and upper surface of tail. It may be added, that the much darker and very differently colored under parts will at once distinguish it from *isabellina* and *distincta*.

Specimens examined: Venezuela — Colon (alt. about 2300 ft.), Tachira, 1 ♂, 1 ♀; near Merida (alt. about 5300 ft.), 7 ♂, 2 ♀.

Colombia — Paramō de Tama (alt. about 7000 ft.), near Venezuelan line, 1 ♂, 1 ♀.

Remarks: Three males have the crown plain, without rufous; two show a slight trace of rufous; three show a small crown patch and one (from Paramō de Tama) has a well marked rufous crown patch. One specimen has a small white spot on the outer web of the second outer primary; one shows a trace, and on the others the outer web of the feather is plain. All of the males have from one to three small spots or streaks on the outer web of the third outer primary, but they are small, narrow, and inconspicuous. Males from Colon, Tachira, and Paramō de Tama, have the tail band very wide, measuring about 33 mm. In the specimen from Merida it varies from 27 to 30, the majority measuring 28 to 29 mm. The coloration of the inner web of the outer rectrix is very variable. In three specimens it is black and white without rufous; three specimens have it part white and part rufous, and three have it rufous with one subterminal black band and white tip.

***Cerchneis sparveria perplexa* subsp. nov.**

Emerillon de Cayenne, Buff., Pl. Enl., I, 1770, pl. 444.

Type from Lower Essequibo River, British Guiana. Adult male, No. 47651, Field Museum of Natural History. From J. Rodway.

Range: Extent of range unknown, probably low country from British Guiana, eastward at least to Cayenne.

Characters: Adult male. Size small; general under parts deeply colored, approaching that of *ochracea*, but back more rufous chestnut; rump and upper surface of tail distinctly tinged with chestnut; crown plumbeous gray, somewhat more plumbeous than in *isabellina*; primaries and secondaries tipped with whitish; inner web of outer rectrix

barred with black and white; outer web of second (outer) primary with only a slight indication of a white spot on the exposed portion near the base, the third the same, but the spot somewhat more exposed; length of black band on the central rectrices 23 mm.

Wing, 169; tail, 120; tarsus, 31 mm.

Female: Wing, 182; tail, 126 mm.

Specimens examined: British Guiana—Essequibo River, 1 ♂, 1 ♀.

Comparative differences: Compared with other races having deeply colored unspotted under parts, *C. s. perplexa* differs from *andina* and *intermedia* in its much smaller size; absence of pronounced white spots on the outer webs of the second and third (outer) primaries, etc., etc. From *ochracea* it differs in its smaller size, shorter tail band, etc. It somewhat resembles *C. s. margaritensis*, but the under parts are more deeply colored; the upper parts more rufous chestnut; and it lacks the well marked white spots on the outer webs of the second and third (outer) primaries. From *C. s. isabellina* it may be distinguished at a glance by its deeply colored under parts.

Remarks: This strongly colored race probably ranges so far east as Cayenne, as it agrees very well with Buffon's colored plate, illustrating the Emerillon de Cayenne (*l. c.*). Bonyan* also refers to the Cayenne bird as the "Chestnut-bellied Falcon." That the deeply colored under parts in this bird is not due to age may be assumed from the fact that fully adult males of *C. s. distincta* (which approaches very closely in coloration of the under parts to *C. s. isabellina*) have the under parts very nearly as pale as in immature specimens.

Cerchneis sparveria isabellina (Swains.).

Falco isabellina Swains., Anim. in Menag., I, 1837, p. 281.

Type locality: Demerara, British Guiana.

Range: British Guiana (limits of range unknown).

Characters: Under parts unspotted or with a few spots on the flanks concealed by the wing; breast and upper abdomen washed with light pinkish cinnamon or pale isabella buff; lower abdomen, thighs, and under tail coverts almost white; outer web of second (outer) primary plain or with a faint trace of a small white spot; outer web of third with two small white spots or a narrow white or whitish streak; inner web of outer rectrix normally rufous† with one subterminal black band and the tip white.

* Proc. Zool. Soc. Lond., 1851, p. 60.

† The specimen in the National Museum collection has the greater portion of the inner web rufous, with two black bands near the end separated by a whitish space.

Wing (of the single specimen examined), 166; tail (badly worn), 115; tail band, 24 mm.

Distinguishing characters: The very pale and unspotted under parts of *C. s. isabellina* will at once distinguish it from other forms, with the exception of *C. s. distincta* from which it apparently differs* in having the crown darker (less ashy); the wing and tail somewhat shorter; and in the white marking of the inner webs of the outer primaries. In *isabellina* (and in most other races) the inner webs of the outer primaries have seven or eight white bars, the dark bars which separate them reaching nearly or quite to the edge of the web on the greater portion, and on some of the feathers the two distal white patches often being confluent. In *distincta*, however, the greater portion of the inner web is white, the dark bars being much shorter and more irregular, often (especially on the basal half of the feather) not extending beyond the middle of the web so that the white areas are correspondingly increased. From *C. s. margaritensis* it may be separated by its paler under parts (less distinctly tinged with ochraceous cinnamon); paler abdomen and flanks; and the absence of distinct white spots on the outer web of the second outer primary.

Specimens examined: British Guiana, 1 ♂ (U. S. Nat. Mus., No. 90160).

Remarks: Judging from published descriptions and the very few specimens I have seen from British Guiana, I am forced to believe that two small forms of *Cerchneis* inhabit that region: one (*isabellina*) a pale form which occurs on the higher savanas of the interior, and the other (*perplexa*) a dark form probably inhabiting the low country bordering the rivers and in the valleys nearer the coast. Swainson's original description of the type (*l. c.*) gives the "breast and body beneath, isabella, unspotted." Wing, 6 3/10 in. and tail 5 in. Penard and Penard (Vogels von Guyana, I, 1908, p. 437) describe *C. s. isabellina* as having the throat white, passing into light brown or yellowish white on the breast; wing 175 mm. Sharpe, who had access to Swainson's type and other specimens from British Guiana (obtained by Schomburgk and preserved in the British Museum), gives the coloration of the under parts of the body as "pale fawn shading into buffy white on the flanks and thighs" (Cat. Bds. Brit. Mus., I, 1874, p. 441). We must, therefore, assume that the bird described as *isabellina* by Swainson is a pale form closely approaching *distincta* in the coloration of the under parts.

A specimen in the collection of the United States National Museum

* The single specimen of *isabellina* I have seen from British Guiana is faded and worn and the measurements evidently below the average. A good series may prove the supposed characters separating it from *C. s. distincta* to be inconstant.

(No. 90160), originally in the collection of Dr. P. L. Slater, and taken in British Guiana by Mr. E. F. im Thurm, agrees very well with the above descriptions in size and pale coloration of the under parts and appears to represent typical *C. s. isabellina* Swainson. It is very likely that the specimen in question came from the high savanas of the interior, probably in the vicinity of Roraima.*

Two specimens from eastern Venezuela, one from Maripa, Caura River, and the other from San Antonio, Bermudez, are puzzling and cannot be readily referred to any described form. Both have the breast decidedly more deeply colored than in *distincta* or *isabellina*, and paler than in *ochracea* or *perplexa*, approaching *margaritensis* in the coloration of the under parts; but the paler gray crown is nearer *distincta*.

The San Antonio bird (wing, 177; tail, 126) has a wide tail band, approaching that of *ochracea*, but in the male from Maripa, the black tail band is much narrower. It is not unlikely that they may prove to be intergrades between *ochracea* and *isabellina*, but more specimens from these localities are needed to determine their relationship.

***Cerchneis sparveria distincta* Cory.**

Cerchneis sparverius distincta Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 297.

Type locality: Boa Vista, Rio Branco, Amazonas, northern Brazil.

Range: Rio Branco region, Amazonas, northern Brazil (limits of range unknown).

Characters: Back ochraceous cinnamon rufous; crown ashy gray and without noticeable dark shaft streaks; chest washed with pale rufous cinnamon (approaching ochraceous tawny, with a tinge of rufous, and palest of the races except *isabellina*), becoming whitish on the abdomen and buffy white on the flanks and under tail coverts; under parts unspotted; outer web of outer rectrix white, with occasionally narrow black streaks bordering the shaft; inner web of outer rectrix largely rufous, with one black subterminal band, the tip white; tips of all except the outer rectrices white, in the middle bordered with more or less rufous; greater portion of the inner web of the outer primaries white, the dark bars or patches being much shorter and more irregular than in allied forms, often (especially on the basal half of the feathers) not extending beyond the middle of the web, the white areas being correspondingly increased; outer web of second (outer) primary plain or with a trace of one small white spot; outer web of third with two (rarely three) small white spots or narrow streaks.

* See Salvin, *Ibis*, 1885, p. 196; *ib.*, 1886, p. 76.

Male: Wing, 182; tail, 130; tarsus, 33 mm. Measurements of seven males: Wing, 174 to 183, average 179; tail, 127 to 131, average 129; tail band, 24 to 28, average about 26 mm.

Female: Wing, 178 to 185, average 183; tail, 131 mm.

Distinguishing characters: Differs from *C. s. isabellina** in the paler (more ashy gray) crown; average longer wings and tail, and much more white on inner webs of primaries. It is separated from *C. s. margaritensis* by its decidedly paler under parts; paler crown; more white on inner webs of primaries; difference in color of inner webs of outer rectrices, and somewhat longer wings and tail. It may be distinguished at a glance from *C. s. ochracea* by its paler under parts, and much narrower tail band; from *C. s. australis* by its unspotted under parts and other characters.

Specimens examined: Brazil — Boa Vista, Rio Branco, Amazonas, 5 ♂, 1 ♀; Base of Serra da Lua Mts., near Boa Vista, 2 ♂, 1 ♀.

Remarks: Four of the males have the crown plain; three show a trace of rufous; one female has the plain, gray crown, the others show a trace of rufous; all of the males have the inner web of the outer rectrix rufous, with one subterminal black band and the tip white.

***Cerchneis sparveria margaritensis* Cory.**

Cerchneis sparverius margaritensis Cory, Field Mus. Nat. Hist. Pub., Ornith. Series, I, No. 8, 1915, p. 297.

Type locality: Margarita Island, off Venezuela.

Range: Margarita Island (and possibly northeastern Venezuela).

Characters: Breast and more or less of abdomen ochraceous cinnamon (much paler than in *ochracea* or *perplexa*, but decidedly darker than in *distincta* or *isabellina*), becoming much paler on lower abdomen and flanks; under parts without black spots, or with a few on the sides which are concealed when the wing is closed; back vinaceous cinnamon rufous, approaching in color that of *C. s. brevipennis*; inner web of outer rectrix dull white, with several black bands; crown approaching deep neutral gray (Ridgway), but slightly paler; outer web of second (outer) primary with two white spots of medium size; the third with three white spots sometimes nearly confluent in the form of a narrow streak.

Male: Wing, 170 to 177, average 175; tail, 120 to 129, average 125; tail band, 23 to 28, average about 26 mm.

Female: Wing, 178 to 184, average 181; tail, 129 to 131 mm.

* Judging from the single specimen of *C. s. isabellina* from British Guiana seen by me, whether or not these differences are constant can only be determined by comparison with a good series from that region.

Distinguishing characters: *C. s. margaritensis* may be distinguished from *C. s. isabellina* by its much darker under parts and marking of the outer rectrices. From *C. s. distincta* it differs by its much darker crown; darker under parts and differently colored outer rectrices. From *C. s. ochracea* it may be separated by its much paler under parts and somewhat narrower tail band; from *C. s. brevipennis* by its larger size and more immaculate under wing covers, etc.; and from *perplexa* by its somewhat paler under parts, less chestnut rufous upper parts, and well marked white spots on the outer webs of the second and third (outer) primaries.

Specimens examined: Margarita Island, 4 ♂, 2 ♀.

Remarks: All of the males have the crown plain, without rufous and the inner web of the outer rectrix black and white. One female has a small rufous crown patch.

***Cerchneis sparveria brevipennis* (Berlep.).**

Tinnunculus sparverius brevipennis Berlep., J.f.O., 1892, p. 91.

Type locality: Curacao Island (off Venezuela).

Range: Curacao, Aruba and Bonaire Islands.

Characters: Similar to *C. s. margaritensis* in general coloration, but with sides of the abdomen more or less spotted with black (in very young birds the whole abdomen is sometime spotted) and with numerous black markings on the under wing coverts; tail band about 25 mm.; inner web of outer rectrix normally black and white; white spots on outer webs of outer primaries as in *margaritensis*.

Adult male: Wing, 163 to 169, average 167; tail, 120 to 128, average 125 mm.

Female: Wing, 169 to 178, average 174; tail, 129 to 134, average about 132 mm.

Young male: Under parts heavily spotted with black, spots on the sides forming a broad band on the feathers and extending on the flanks; gray feathers of the wing coverts edged with pale rusty; some of the feathers on base of crown edged with rufous; back with broad black bands on the feathers extending nearly to the nape; inner web of outer rectrix as in adult, except tips, this and other rectrices washed with rufous; white spots on outer webs of outer primaries as in the adult. (Young male) Wing, 158; tail, 125 mm.

Distinguishing characters: The short wing combined with the vinaceous cinnamon back will distinguish *C. s. brevipennis* from other races.

Specimens examined: Curacao I., 7 ♂, 5 ♀; Aruba I., 2 ♂, 2 ♀.

Remarks: Two males have a small rufous crown patch; three show a trace of rufous and the rest are plain. Four of the seven females show a little rufous on the crown. Two of the males have the inner web of the outer rectrix with some rufous on the basal portion, but seven have it black and white without rufous. Two very young males have the plumbeous gray feathers of the wings edged with rusty; the back heavily banded with black and the feathers on the posterior portion of the crown distinctly marked with rufous in one and slightly so in the other. Both specimens have the entire abdomen spotted with black,* the inner web of the outer rectrix barred with black and white, and the white tips of the rectrices show a slight wash of rufous.

KEY TO THE SUBSPECIES.

ADULT MALES

Males may be distinguished from females by their plumbeous gray wing coverts and (in South American races) by having but one black bar on the central rectrices, differently marked under parts, etc.

I. Breast and often more or less of under parts strongly ochraceous cinnamon, or cinnamon rufous.

A. Under parts with numerous black spots.

a. Back rufous or cinnamon rufous; black bars variable.

a' Wing more than 186; tail band more than 24 mm.

Wing, about 190; tail, about 140; tail band 26 mm.

C. s. æquatorialis, p. 322.

b' Wing less than 186; tail band less than 24 mm.

Greater portion of under parts deeply colored.

C. s. cuacæ, p. 321.

Under parts much paler; abdomen buffy white or whitish.

C. s. peruviana, p. 319.

b. Back rufous chestnut; black bars large.

Black markings on under parts irregular and conspicuously heavy.

C. s. fernandensis, p. 316.

B. Under parts without black spots or with black spots confined to the sides and largely concealed when the wing is closed.

* This would seemingly indicate that the black spotting on the under parts (in this form at least) is a juvenile character which largely disappears and becomes confined to the sides in the adult. But this is apparently not the case in such races as *C. s. australis*, *C. s. peruviana*, *C. s. cinnamomina*, etc., as no unspotted specimens have ever been recorded and the numerous unquestionably adult specimens which I have examined have a considerable portion of the under parts strongly spotted.

a. Back cinnamon rufous, or chestnut rufous.

a' Wing less than 177 mm.

Black tail band about 23; exposed outer webs of second and third (outer) primaries plain or with a small white spot at the base.

C. s. perplexa, p. 327.

b' Wing more than 177 mm.

Black tail band, about 29 (28 to 34); tail, about 131; outer web of second (outer) primary plain or with one small white spot; spots on outer web of third primary small; outer web of fourth plain.

C. s. ochracea, p. 326.

Black tail band, about 20 (18 to 23); tail, average about 131; white spots on outer web of third (outer) primary larger; the outer web of fourth plain.

C. s. intermedia, p. 325.

Black tail band, about 18 (15 to 21); tail long, 138 to 144; outer webs of second, third, fourth, and fifth (outer) primaries with large white spots.

C. s. andina, p. 323.

b. Back vinaceous cinnamon.

Wing more than 170 mm. *C. s. margaritensis*, p. 331.

Wing less than 170 mm. *C. s. brevipennis*, p. 332.

II. Breast tinged with pale ochraceous cinnamon, pale cinnamon rufous, or breast buffy white or white.

A. Under parts with numerous black spots.

a. Back cinnamon rufous or rufous.

Black tail band narrow (9 to 16); tips of rectrices partly or wholly rufous; wing more than 190; inner web of outer rectrix normally rufous with one black band.

C. s. cinnamomina, p. 315.

Tail band 18 to 22; wing less than 187 (175 to 185), average 181; tail, 122 to 131, average 127; inner web of outer rectrix normally black and white; under parts paler than *peruviana*; sides and flanks whitish.

C. s. australis, p. 316.

Tail band 17 to 22; wing less than 187 (175 to 185), average 181; tail 129 to 138, average 134; under parts usually darker than in *australis*; sides and more or less of flanks buffy; inner web of outer rectrix normally rufous with one black band.

C. s. peruviana, p. 319.

b. Back vinaceous cinnamon.

Wing less than 170; some specimens have exposed spots on sides of abdomen; very young birds are much spotted on the under parts.

C. s. brevipennis, p. 332.

B. Under parts without black spots or with black spots confined to the sides and largely concealed when the wing is closed.

a. Back rufous cinnamon.

Breast pale, only slightly tinged with pale ochraceous cinnamon or isabella buff; dark bars on inner webs of primaries not unusually restricted and white areas not unusually large; inner web of outer rectrix normally rufous.

C. s. isabellina, p. 328.

Breast washed with pale ochraceous cinnamon; greater portion of inner webs of primaries white, many of the dark bars being short and irregular; inner web of outer rectrix rufous.

C. s. distincta, p. 330.

b. Back vinaceous cinnamon.

Breast and more or less of under parts usually strongly tinged with ochraceous cinnamon; wing more than 170; inner webs of outer rectrices normally black and white.

*C. s. margaritensis**, p. 331.

Breast and more or less of under parts usually strongly tinged with ochraceous rufous; wing less than 170; inner web of outer rectrix normally black and white.

C. s. brevipennis, p. 332.

* *C. s. margaritensis* and *C. s. brevipennis* properly belong in Group I, but an exceptionally pale specimen might be looked for here.

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DESCRIPTIONS OF APPARENTLY NEW
SOUTH AMERICAN BIRDS, WITH
NOTES ON SOME LITTLE
KNOWN SPECIES

BY

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CHICAGO, U. S. A.

August 30, 1916.

DESCRIPTIONS OF APPARENTLY NEW SOUTH AMERICAN BIRDS, WITH NOTES ON SOME LITTLE KNOWN SPECIES

BY CHARLES B. CORY

Since the publication of my last paper on South American birds,* further study of the collections secured by the members of the Museum's expeditions in South America has brought to light a number of new forms which it seems advisable to describe at the present time, as the detailed report on the results of the expeditions will not be ready for publication for some months.

***Conopophaga lineata cearæ* subsp. nov.**

Type from Serra Baturité, Ceará, Brazil. Adult male, No. 47264, Field Museum of Natural History. Collected by R. H. Becker, July 18, 1913.

Approaches nearest to *C. l. lineata* (Wied), but differs in having the crown more rufous brown, the crown being lighter and more rufous brown than the back; lores and a narrow frontal streak black; post-ocular pencil of elongated feathers entirely pure white, without any trace of grayish at the base; throat and breast orange brown, brighter than in *lineata*; middle of belly pure white; flanks and under tail coverts approaching raw sienna.

Wing, 70; tarsus, 22 mm. (tail imperfect in type specimen).

***Thamnophilus doliatus dearborni* Cory.**

More specimens have been received of this apparently well marked subspecies. Compared with specimens from Mérida (which I assume to represent typical *T. d. nigrescens* Lawr.), *T. d. dearborni* (from Encontrados, Zulía, Venez.) may be readily distinguished by the more heavily banded abdomen and flanks, heavier marked throat, etc. The female is also darker in coloration.

***Dysithamnus mentalis leucobronchialis* subsp. nov.**

Type from near Lagoa Santa, Minas Geraes, Brazil. Male (not fully adult), No. 49118, Field Museum of Natural History. Collected by R. H. Becker, January 24, 1914.

*Field Mus. Nat. Hist. Pub., Ornith. Series, Vol. I, No. 9, Aug. 7, 1915.

Similar to *D. m. mentalis* (Temm.), but wing longer and entire throat whitish gradually shading into the pale yellowish of the under parts.

Wing, 60; tail, 42; bill, 13 mm.

I describe this new subspecies with hesitation, as the single specimen secured is somewhat immature; but the gray crown, olive gray back, and coloration of the under parts do not agree with immature specimens of *D. m. mentalis* which I have seen.

***Dysithamnus schistaceus hellmayri* subsp. nov.**

Type from Rioja, Peru. Adult male, No. 49113, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, July 4, 1912.

Approaches *D. s. heterogynus* in general coloration, being darker gray than *D. s. schistaceus*. The bend of the wing and upper wing coverts are uniform schistaceous and there is apparently no white interscapular patch. The bill is heavier and longer than that of *D. s. schistaceus* and the feathers on the crown have black centers. The under wing coverts (except near the border) are yellowish white.

Wing, 68; tail, 54; bill (culmen), 19; depth of bill at nostril, 8 mm.

This is not unlikely the bird referred to by Hellmayr as "subspecies b" from Yurimaguas (Nov. Zool., 1907, p. 62), but I do not find that it has been given a name.

***Cercomacra huallagæ* sp. nov.**

Type from Lagunas, Lower Huallaga River, Peru. Immature male, No. 41119, Field Museum of Natural History. Collected by M. P. Anderson, October 16, 1912.

Entire upper parts slate gray, with the usual concealed patch of white on the interscapular region; crown more dusky and the back more bluish slate color. Feathers of the throat largely black, but more or less mixed with gray (probably due to immaturity). Breast and sides of body slate gray, becoming paler on the belly, and the feathers of the lower belly very narrowly tipped with whitish; upper wing coverts and bend of wing immaculate, with no white anywhere. Tail black, more or less tinged on the upper surface with slate color. Tail feathers, except the middle ones, very narrowly tipped with white. Wings blackish, the upper coverts like the back and the exposed edges of the quills very narrowly edged with slate color.

Wing, 73; tail, 56; bill, 14 mm.

Although the coloration of the throat would indicate immaturity, I can not refer this bird to any described form. The general coloration is much more slate color than any of the allied species. The longer wing and grayer coloration will distinguish it at once from *approximans*, *tyrannina*, *sclateri*, etc.

The female has the throat whitish mottled with dusky, in this approaching *carbonaria*, but the belly is buffy ochraceous and much paler than in *tyrannina*.

Female: Wing, 71; tail, 53 mm.

***Myrmeciza berlepschi peruviana* subsp. nov.**

Type from Yane Yacu, near Yurimaguas, Peru. Adult male, No. 49121, Field Museum of Natural History. Collected by M. P. Anderson, September 9, 1912.

Similar to *M. b. berlepschi* Ridgway from Chimbo, N. W. Ecuador, but larger; wing longer, and bill heavier. It also differs in having much less white on the bend of the wing.

Wing, 92; tail, 67; bill, 22; tarsus, 30 mm.

Compared with the type of *M. b. berlepschi* preserved in the U. S. National Museum.

***Furnarius leucopus cearæ* subsp. nov.**

Type from Quixada, Ceará, Brazil. Adult male, No. 49120, Field Museum of Natural History. Collected by R. H. Becker, June 27, 1913.

General coloration approaching *F. l. assimilis* and the rufous markings on the primaries about the same; but differs in having the entire upper mandible dark brown; the crown of the head sepia brown (approaching that of *F. l. leucopus*), with the forehead showing a tinge of rufous. Back, rump, and tail approaching *assimilis* in coloration, but slightly more orange brown; middle of abdomen and exposed under tail coverts purer white; the basal portion of the larger under tail coverts brownish black, not distinctly brown as in *assimilis*; legs and feet pale.

Wing, 93; tail, 65; culmen, 19; tarsus, 23 mm.

Two specimens of this subspecies were also taken at Serra Baturité, Ceará, Brazil, by Mr. Becker.

***Schizæaca fuliginosa peruviana* subsp. nov.**

Type from mountains east of Balsas, Peru (alt. 10,000 feet). Adult male, No. 47677, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, May 20, 1912.

Similar to *S. f. fuliginosa* from Colombia, but differs in having the under parts more gray and lacking the olive tinge, except on the flanks, and the upper parts somewhat brighter and more rufescent than in that species. Forehead with a slight grayish tinge; outer webs of outer primaries paler and more rufescent, the rufous reaching the shaft of the feather on at least the second and third (outer) primaries. Wing averaging longer.

Wing, 59; bill, 11; tarsus, 24 mm.

Synallaxis cinnamomea cearensis subsp. nov.

Type from Jua, near Iguatu, Ceará, Brazil. Adult male, No. 45624, Field Museum of Natural History. Collected by R. H. Becker, July 31, 1913.

Similar to *S. c. cinnamomea*, but paler; upper parts decidedly lighter rufous, and the tail, especially the under surface, much paler rufous.

Wing, 58; tail, 60; culmen, 8 mm.

Siptornis orbignii neglecta subsp. nov.

Type from Macate, central Peru (alt. about 10,000 feet). Adult male, No. 49111, Field Museum of Natural History. Collected by M. P. Anderson, February 13, 1914.

Approaches *S. orbignii* (Reich.) in having the crown like the back, no black points on the throat, and in having the broad basal rufous band on the secondaries; but differs in having the under parts more grayish brown (less pale cinereous) and the patch on chin and upper throat deep chestnut rufous (much darker and more chestnut rufous than in either *orbignii* or *ottonis*), and the rufous on the upper tail coverts, tail and wings is darker.

Wing, 62; tail, 82; bill, 15 mm.

***Automolus leucophthalmus sulphurascens* (Licht.).**

Five specimens from Rio das Velhas, Minas Geraes, Brazil, differ from typical *A. l. leucophthalmus* (type in American Museum of Natural History), while specimens from Bahia agree with the type. The type of *A. l. leucophthalmus* very likely came from Bahia and the Minas Geraes specimens probably represent *A. l. sulphurascens* (Licht.), which should be revived. They differ from specimens from Bahia in having the tail and rump decidedly paler and much brighter rufous; the under wing coverts are paler.

Xiphocolaptes promeropirhynchus iguatensis subsp. nov.

Type from Jua, near Iguatu, Ceará, Brazil. Adult male, No. 49117, Field Museum of Natural History. Collected by R. H. Becker, September 1, 1913.

General marking approaching *X. p. promeropirhynchus*, but coloration quite different and very much paler on the under parts. The wings and tail are decidedly lighter rufous (less chestnut rufous); crown and back grayish olive brown, the crown slightly darker and with narrow whitish shaft streaks; rump and upper tail coverts bright rufous; under parts pale grayish brown, streaked with white; middle of throat dull whitish; no black spots or bars on belly, these being replaced by a few obscure (almost obsolete) small spots and broken bars of pale grayish brown; under wing coverts pale rufous, irregularly barred with black; bill blackish at the base, the rest pale horn color.

Wing, 126; tail, 110; bill, 41 mm.

Other examples of this very distinct form were taken near Jua by Mr. Becker. I have not seen *X. p. berlepschi* Snethlage, but from the description it is quite different.

Picolaptes fuscus atlanticus subsp. nov.

Type from Serra Baturité, Ceará, Brazil. Male, No. 49116, Field Museum of Natural History. Collected by R. H. Becker, July 13, 1913.

Similar to *P. f. fuscus* (Vieill.), but differs in being larger; the rump and tail more chestnut rufous; the throat tinged with pale buff, and the under parts more tinged with ochraceous. The feathers of the throat are very narrowly edged with dusky.

Wing, 87; tail, 80; bill, 29 mm.

Campylorhamphus trochilirostris major* Ridgway.

Several specimens of this well marked subspecies (which agree perfectly in size and coloration with the type specimen in the U. S. National Museum) were secured at Jua and Serra Baturité, Ceará, Brazil. The exact type locality being previously unknown, being given as "Brazil," I now designate for it the Province of Ceará, Brazil.

Tænioptera cinerea obscura subsp. nov.

Type from Saõ Marcello, Rio Preto, Bahia, Brazil. Adult male, No. 49125, Field Museum of Natural History. Collected by R. H. Becker, March 18, 1914.

*Bds. N. and M. Am., V, p. 269, 1911.

Similar to *T. c. cinerea* Vieill. (*nengeta* auct., nec. Linn.), but larger; wing longer, and upper parts and breast much clearer gray.

Wing, 140; tail, 100; tarsus, 27 mm.

***Muscisaxicola rufivertex ruficrissa* subsp. nov.**

Type from Macate, central Peru (alt. about 10,000 feet). Adult male, No. 49126, Field Museum of Natural History. Collected by M. P. Anderson, March 3, 1914.

Similar to *M. rufivertex*, but crown patch more chestnut and more extensive, and under tail coverts tinged with pale rufous.

Wing, 110; tail, 72; tarsus, 24; bill, 15 mm.

A puzzling specimen from Cajamarca, Peru, approaches *M. r. occipitalis* Ridgway in coloration of tail, upper tail coverts, and paler crown patch, but the under tail coverts are tinged with rufous as in *ruficrissa*.

***Todirostrum cinereum cearæ* subsp. nov.**

Type from Serra Baturité, Ceará, Brazil. Male, No. 49127, Field Museum of Natural History. Collected by R. H. Becker, July 18, 1913.

Similar to *T. c. cinereum*, but smaller; wings and tail shorter, and bill smaller. Edgings of wing coverts and primaries white instead of yellow.

Wing, 40; tail, 34; bill, 11 mm.

It is evident that these differences are not due to immaturity, as the crown is entirely black (not gray on the back part as in immature birds of *T. c. cinereum*) and young birds of *T. c. cinereum* have the wing coverts edged with buffy.

***Myiodynastes luteiventris vicinior* subsp. nov.**

Type from Yurimaguas, Peru. Male, No. 44859, Field Museum of Natural History. Collected by M. P. Anderson, October 4, 1912.

Similar to *M. l. luteiventris* Sclater, but smaller, and the dusky stripe on middle tail feathers much narrower; outer tail feathers plain rufous with only the shafts dark.

Wing, 104; tail, 82; bill, 19 mm.

The type specimen has the bases of the middle crown feathers edged with pale buff which may be due to immaturity. Compared with a series of immature *M. l. luteiventris*, the same differences exist in the

tail markings, especially the middle feathers. The type also agrees with adults in lacking the buffy marking on the nape, which is present in young birds of *luteiventris*.

***Myiarchus tyrannulus pallescens* subsp. nov.**

Type from Jua, Ceará, Brazil. Adult male, No. 48803, Field Museum of Natural History. Collected by R. H. Becker, August 21, 1913.

Similar to *M. t. tyrannulus*, but belly somewhat paler yellow and breast much paler ashy; throat ashy white, the middle portion almost white. Back much paler than in *M. t. bahiæ*, and more grayish olive than in *M. t. tyrannulus*; outer tail feather with a very faint trace of pale rufous bordering the inner web.

Wing, 92; tail, 90; bill, 20 mm.

***Pachyrhamphus niger tobagensis* subsp. nov.**

Type from Tobago Island, West Indies. Adult male, No. 21016, Field Museum of Natural History. Collected by W. W. Brown, May 9, 1892.

Intermediate in coloration between *P. n. niger* and *P. n. cinereiventris*; darker than the latter (compared with specimens from Santa Marta, Colombia and northern Venezuela) and much more grayish (less blackish) on the under parts than *P. n. niger*.

Wing, 76; tail, 60; bill, 13 mm.

The female is paler and more grayish than the females of either *niger* or *cinereiventris* and the wing coverts are tipped with white.

For many years I have been satisfied that the Tobago form of this bird should be subspecifically separated from birds from Trinidad and the mainland, but having only a single female I hesitated to do so. An examination of a male, however, still further confirms my belief, and on comparing it with large series of typical *P. n. niger* and *P. n. cinereiventris* I am convinced that the Tobago bird is worthy of subspecific recognition.

***Polioptila livida cearensis* subsp. nov.**

Type from Jua, near Iguatu, Ceará, Brazil. Adult male, No. 49127, Field Museum of Natural History. Collected by R. H. Becker, August 1, 1913.

Approaches nearest to *P. l. leucogaster* in coloration of upper parts and head marking, but throat and under parts are white, tinged with

cream color with only a faint trace of ashy on sides of the breast; outer wing coverts broadly edged with white; white end of third outer tail feather more extensive.

Wing, 52; tail, 53; bill, 10 mm.

Cistothorus platensis tamæ subsp. nov.

Type from Paramo de Tama (head waters of the Tachira River), Venezuela. Adult male, No. 44860, Field Museum of Natural History. Collected by W. H. Osgood and S. G. Jewett, March 1, 1911.

General coloration more rufous brown than either *C. p. æquatorialis*, *meridæ*, or *apolinari*, and decidedly smaller than the last; crown brown with only a slight tinge of rufous and obscurely streaked with dusky. Coloration of upper parts approaching *æquatorialis*, but pale streaks on the back more buffy; under parts much darker rufous brown, with only a slight indication of whitish on the middle of belly and throat; rump plain.

Wing, 48; tail, 47; bill, 12 mm.

Five males and one female examined from the type locality.

Troglodytes musculus beckeri subsp. nov.

Type from Serra Baturité, Ceará, Brazil. Adult male, No. 49115, Field Museum of Natural History. Collected by R. H. Becker, July 14, 1913.

Similar to *T. m. musculus*, but differs in having the under parts paler and more buffy rufous; under tail coverts clear ochraceous rufous without spots or bars; crown and back paler and more grayish than in *musculus* and the upper tail coverts brighter rufous. From *T. m. clarus* it may be at once distinguished by its brighter rufous upper tail coverts and more rufous and unmarked under tail coverts, more grayish tinged back and the pronounced rufous buff coloration of the sides of the body.

Wing, 52; tail, 43; bill, 13 mm.

Planesticus rufiventer juensis subsp. nov.

Type from Jua, near Iguatu, Ceará, Brazil. Adult male, No. 49114, Field Museum of Natural History. Collected by R. H. Becker, August 1, 1913.

Similar to *P. r. rufiventer* from Minas Geraes and Rio de Janeiro, but differs in having the upper parts decidedly more grayish olive and the belly and flanks paler and more ochraceous rufous.

Wing, 124; tail, 114; bill, 20; tarsus, 33 mm.

Eight specimens examined from the type locality.

Anthus bogotensis immaculatus subsp. nov.

Type from mountains east of Balsas, Peru (alt. 10,000 feet). Male, No. 44526, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, May 19, 1912.

Similar to *A. b. bogotensis*, but differs in having the black markings of the upper parts less pronounced and the sides and flanks immaculate (without streaks).

Wing, 76; tail, 55; tarsus, 22 mm.

Saltator striatipectus peruvianus subsp. nov.

Type from Hda. Limon, 10 miles west of Balsas, N. Peru. Male, No. 49104, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, May 6, 1912.

Similar to *S. s. striatipectus* Lafr. from Colombia, but crown, sides of head (including ear coverts) and sides of throat olive green like the back; streaks on under parts heavier and darker; upper parts somewhat deeper olive and rump less tinged with grayish.

Wing, 90; tail, 88; bill, 18 mm.

Seven specimens examined from the type locality.

Coryphospingus pileatus brevicaudus subsp. nov.

Type from Margarita Island (off Venezuela). Adult male, No. 38540, Field Museum of Natural History. Collected by John F. Ferry, March 2, 1909.

Similar to *C. p. pileatus*, but tail much shorter and general size averaging smaller. Lores whitish, decidedly less grayish than in Brazilian specimens of *C. pileatus*. The type specimen has the nape black, but other specimens from Margarita Island do not show this, although the nape and upper back are darker than in Brazilian specimens.

Wing, 62; tail, 49; bill, 12; tarsus, 19 mm.

Tangara cyanocephala cearensis subsp. nov.

Type from Serra Baturité, Ceará, Brazil. Adult male, No. 49106, Field Museum of Natural History. Collected by R. H. Becker, July 15, 1913.

Similar to *T. cyanocephala corallina* Berlepsch from Bahia, but differs in having the crown darker and more purplish blue, the shorter upper tail coverts conspicuously tipped with bright light blue (forming a band

about 5 mm. in width), pale blue separating the black of the forehead from the dark blue of the crown only slightly indicated, and size somewhat larger.

Wing, 56; tail, 49; bill, 9 mm.

***Schistochlamys atra grisea* subsp. nov.**

Type from Rioja, Peru. Adult female, No. 49105, Field Museum of Natural History. Collected by W. H. Osgood and M. P. Anderson, July 8, 1912.

Similar to *S. a. atra* from Guiana, but general coloration darker and more slaty gray, most pronounced on the under parts, especially on the flanks and under tail coverts.

Wing, 86; tail, 84; bill 15 mm.

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